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ARCHITECTVRE

ENGINEERING

DECORATION

CONSTRVCTION

TICKNOR & COMPANY

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House of Mr. Zenas Crane, Jr.
Dwelling-houses, New York, N. Y.
Pavilion of the Chateau de Blois, France.

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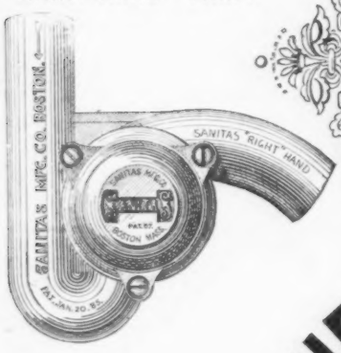

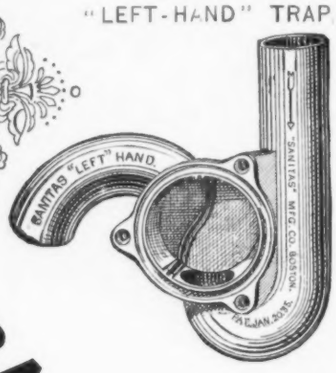

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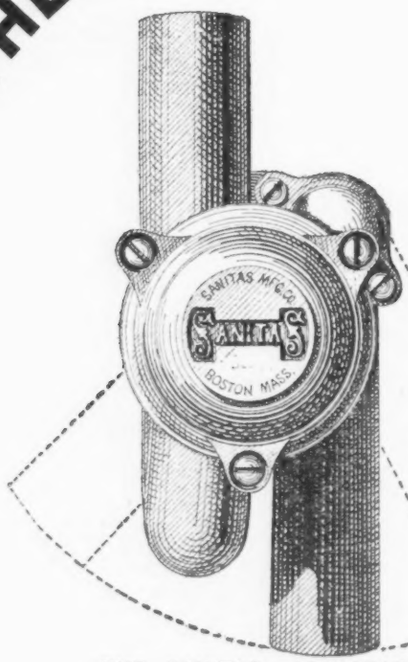

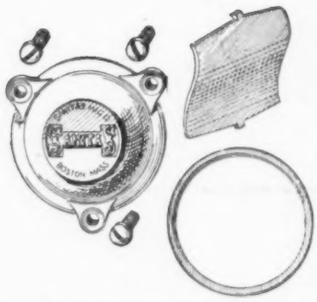

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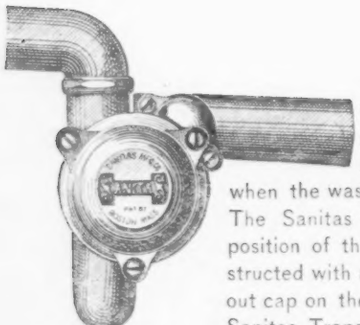

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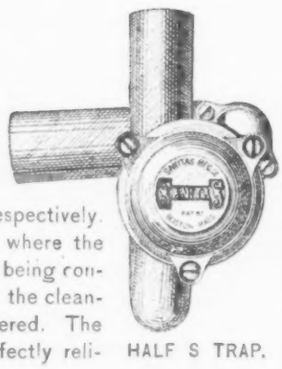

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MAYOR HEWITT, of New York, who frequently propounds some new idea, which, moreover, is generally good, has made public a suggestion which will be heartily seconded by thousands of the quiet, sensible Americans who have succeeded in making this country what it is, in spite of the howling quacks from every clime who try to advertise themselves by attempts to interrupt its progress. Not long ago, the wife of a Knight of Labor wrote a touching letter to the editor of one of the daily papers, begging him to interfere with his great influence to prevent a strike from being ordered. Her husband, she said, had steady work at satisfactory wages, and they were living comfortably, and laying up something for the next winter. If the Executive Committee of the District Assembly should order a strike, as it was reported they intended to do, to show "sympathy" with some other deluded Assembly, or on some other pretext, he would be compelled to give up his work, perhaps through the busy season, and his poor family must look forward to a winter of privation and misery. She knew by sad experience what this meant, and in the extremity of her helplessness before the might of the "colossal organization," she appealed to the only power that she knew to be capable of opposing it. A few days later, a member, not of the "colossal organization," but of the class which that organization systematically hounds and persecutes, wrote to Mayor Hewitt, calling in also his aid against its unrelenting malice. The writer was a plasterer, standing, as he said, "at the head of his profession," and with a wife and five little children dependent on him for the means of existence. Three years ago, being, apparently, a man of considerable energy, and disposed to better his condition, he agreed to a proposition to work by the hour instead of by the day. For this violation of its principles, he was fined fifty dollars by the Plasterers' Society. It is hardly necessary to say that working-men with large families to support do not usually have fifty dollars about them, and he could not pay his fine. The Society thereupon commenced the well-known persecutions by which working-men are terrified into silence and submission. A watch was set upon the delinquent and if he found employment anywhere, notice was given to his employer to discharge him, under threat of the usual penalties. After going in this way from place to place, he had an opportunity to speak with the "walking-delegate" who had come to deprive him again of his living. The delegate informed him that he had imperative orders to "knock him off" wherever he found him, but said that if he would appear before the Society leaders that evening he might make an arrangement with them. He went to them accordingly, and was told that by the payment of eighteen dollars and a half he might obtain a "permit" to work. Not having eighteen dollars and a half, any more than the previous fifty, he could not buy a permit to earn his living, and the next morning his employer discharged him, without assigning any reason. Not knowing what else to do, the victim of his inability to pay to the "colossal organization" the money which the organization prevented him from earning appealed to the Mayor, as a "defender of the rights of American citizens," to tell him what to do next. Mr. Hewitt replied in his usual sensible way, saying that he had received many other letters of the same sort, and, while conspiracies to take away a man's business, like the one described, were illegal and indefensible, and subjected those guilty of them to the payment of damages, he understood how impracticable it was for a poor working-man to obtain damages by process of law. He suggested, therefore, that an association might be formed in New York for the purpose of defending "the rights of honest men who are refused the opportunity to earn their own living," and promised to co-operate with any citizens who might think with him that the occasion was one needing "prompt and earnest action."

BY the courtesy of Senator Hoar, of Massachusetts, we are favored with a copy of the bill introduced by him last year in the United States Senate for the establishment of a National Art Commission. The bill proposes that the President shall appoint a Commission of fourteen persons, four of whom shall be eminent sculptors, four eminent painters, three eminent architects, and three selected from other employments for their knowledge and good taste in art, whose duty it shall be "to report upon the character and value of such plans of public buildings, monuments or works of art as shall be referred to them by either House of Congress, or by the Joint Committee on the Library, and, when so authorized by Congress, to select designs offered by competitors for works of art ordered by Congress, and to render such other service as may from time to time be required of them by Congress." The Secretary of the Commission, and a member of it, is to be the Architect of the Capitol, *ex-officio*, so that the architects will equal in number the painters and sculptors. It is proposed that the members shall be appointed for three years, and serve without pay, but their expenses shall be reimbursed when they meet at Washington, as they are expected to do once a year. The bill is now before the Committee on the Library, and, if reported favorably, may very probably pass, as is certainly very desirable. To our mind, the appointment of a Commission like the one proposed is a step far better suited to the character and circumstances of our country than the establishment of a Ministry of Fine Arts, which is sometimes advocated. With us anything like an official art is impossible. Even if we had a single great national academy, where all our painters and sculptors were educated by the same methods and under the same masters, we have no prefects, or local representatives of the central administration, to impose a uniform style on all works of art done for the public; and the mixture, or perhaps rivalry, of State and local schools of painting, sculpture and architecture, brought periodically into contact and comparison before a representative Commission at Washington, as the works of Greek artists were before the elected judges at Olympia, could not fail of the happiest results for American art. Hitherto, our artists have suffered by seeing too little of each other's works. Who, for instance, among the New York painters and sculptors, knows anything about the beautiful carving in wood that is done in Cincinnati; or what artist west of the Niagara River could name over the works of George Fuller, of Massachusetts, or Mr. Inness, of New York? Yet the Cincinnati carving and the Eastern painting are alike things for Americans to be proud of, and each of them would be better still for a mutual acquaintance among their authors. The work which such a Commission as Mr. Hoar's bill proposes would have to do, would consist to a great extent in the introduction, so to speak, of all our best artists to each other. The honor of membership in it could be sought with so much eagerness as to constitute the appointment one of those high professional rewards which we need here so much, and its decision would command attention and respect all over the country. The New York painter who found a Chicago picture preferred to his by such a jury would be likely, much to his own advantage, to take the first opportunity of visiting Chicago to find out in what the superiority of the local school consisted;

and the Texan sculptor, defeated by a Boston rival before judges of such standing, would soon come to Boston to share in the advantages of life-schools and antique models which had once given his rival the victory. Apart from its use to artists and art, the Commission would render an immense service to the public. It is quite unnecessary to reproach our legislators with the want of discrimination in art which appears in the decorations of the Capitol at Washington. We venture to say, much as we dislike some of the pictures and frescos in the building, that no large legislative body in the world, under the same circumstances, would have made a better selection. To the lawyers and editors who represent the people in Washington or London or Paris or Berlin the comparative merits of pictures or statues are as unintelligible as the refinements of the Roman law would be to a painter. Most of them are quite aware of this, and would gladly hand over to an expert committee the task of deciding upon matters of public art, just as a painter would put on a lawyer the responsibility of defending him in a suit, if there were any such committee within reach. In France there is always some such authority to make the decision, but in England and this country there has hitherto been none, and commissions for the public pictures or statues have consequently gone to the artists who had the prettiest ringlets, or gave the pleasantest dinner-parties, or presented the most formidable list of recommendations.

THE *Builder* speaks of a recent auction sale of land on Broadway, New York, at which about one hundred and forty-two dollars per square foot were paid; and says that "the value of land in New York does not appear to be so high as in the city of London, where land on Cornhill and its neighborhood has been sold for two hundred dollars per square foot." We should be sorry to see New York lose its preëminence as the most valuable area of land on earth, and hasten to suggest that a comparison between Broadway, above Wall Street, and Cornhill in London, is hardly fair. Cornhill, as the central point from which the greatest English corporations are managed, corresponds rather to Wall Street than to Broadway; but although the business of Cornhill is the direction of two-thirds of the marine traffic of the world, and of the inland commerce of a large part of four continents, that of Wall Street is practically confined to the internal affairs of a single nation; a lot on Wall Street is said to have been sold some years ago for three hundred dollars a square foot, and would probably bring much more now. If we are not mistaken, this is the highest price ever paid for land anywhere. It is true that the area of excessively valuable territory in London is larger than in New York, but to make up for this the price of real estate in the parts of New York remote from the business quarter are much higher than in the corresponding portions of London. It is not very long since a lot on the corner of Fifth Avenue and Forty-second Street, then surrounded on all sides by private dwellings, brought sixty-five dollars a square foot, and for many years a fair exchange for a lot on the most fashionable streets has been a sum which would at least cover the lot with silver fifty-cent pieces. At still greater distances from the centre of business the difference is even more striking. Lots in the outer zone of London are very commonly rented on long building-leases, so that nothing more than the unexpired term of the lease is sold; but freehold land can occasionally be had, and brings, so far as our observation goes, generally a good deal less, rather than more, than a dollar a square foot, while land in New York, more than nine miles from Wall Street, has recently brought five and one-half dollars a foot at auction.

NOTHING astonishes an American abroad more than the backwardness of foreigners in adopting the little household conveniences which with us are matters almost of necessity. On the Continent, where people seem to live generally in the streets, and to have well-founded objections to staying in their houses any more than they can help, it is not so surprising that great pains should not be taken to render domestic life easy and convenient; but in England, the country, above all others, of beautiful and happy homes, one is often distressed to see the labor habitually expended upon work which in this country would be done almost automatically by some sort of ingenious appliance. We remember once going over the Belgravian mansion of Sir George Grey, ex-viceroy of India, and finding the kitchen in this aristocratic abode furnished with an enormous open fireplace, in which swung a crane, with pot-hooks and hangers, the whole, with the addition of a brick oven, forming the only cooking apparatus of the establishment; and every traveller can give plenty of illustrations of the discomforts of English houses. Even where American devices are transported across the water, they are received with suspicion, and are regarded as eccentric novelties for years after they have come into universal use with us. The last of these inventions to be introduced to the British public seems to be the well-known electric gas-lighting apparatus. Few houses, even of very modest pretensions, would now be built in or near any of our Northern cities without this indispensable feature; but it appears to gain ground very slowly in England. The *Builder* says, rather doubtfully, after describing the system, by which the gas can either be turned-on, lighted, or turned-off, by pushing a button, with the automatic burner, or turned-on by hand, and lighted by a pull at a pendent chain, that the apparatus appears to it "rather a pleasing toy than a serious convenience"; going on to explain that "it is hardly worth while to have a special electric mechanism merely to light the gas." This sounds very funny to people who never think of using matches or tapers to light the gas in their houses, and who would not on any account go back to that old-fashioned and dangerous practice. Even if the *Builder* thinks it of no advantage to be able to light the gas in the room by pulling a chain, or touching a button, instead of feeling in the dark on the mantel for the match-box, at the peril of upsetting the bric-à-brac behind which it lies concealed, and then succeeding in reaching the key and turning on the gas just in time to have the red-hot remnant of the match drop into one's sleeve, while the gas, unlighted, pours into the room, it must, we should imagine, acknowledge that there is practical utility in an apparatus by which the gas in any room can be lighted from any other. In thousands of American houses the entrance-halls and vestibules are now lighted by the touch of a button in the rooms above, so that a ring at night, or an unusual noise below stairs, is immediately answered by lighting up the rooms, as a preliminary to a descent to see what is the matter; while in hundreds more the lanterns in the carriage porch, or along the driveway, are lighted and extinguished from the house in the same manner. With us the use of this simple and effective system is rapidly extending. We know a house where not only the gas-lights but the fires are kindled and extinguished by the touch of a button; and the best of all systems of burglar alarm is that under which the house-breaker, on crawling through the basement windows, instead of frightening the family out of their wits by sounding a bell and displaying a sign in the bedrooms, to the effect that ferocious criminals have arrived in the kitchen, sets in motion an apparatus which begins by suddenly illuminating with great brilliancy the place in which he had intended to do his deeds of darkness, at the same time deafening him by ringing an immense gong close to his head until the attention of the police is attracted to the place; the whole of the little drama going on without interrupting the slumbers of the unconscious master of the house in his room above.

SEVERAL of the foreign papers quote from the *Bulletin Ceramique* the following recipe for making a cement suitable for repairing stone. The cement consists of two preparations, a solid and a liquid. The solid portion is composed of two parts by weight of oxide of zinc, two parts of marble dust, one part of pounded earthenware or brick dust, and ochre enough to color the whole to the shade desired. These substances are mixed dry, and well stirred together. The liquid is made by dissolving zinc filings in commercial muriatic acid until it will dissolve no more, and adding to the solution one-sixth as much, by weight, of chloride of ammonium as there is of zinc in the solution. This is stirred in, and the mixture diluted with two-thirds its volume of water. When wanted for use, ten pounds of the powder are mixed with three pints of the liquid, forming a paste which solidifies very quickly, and soon becomes very hard. After forty-eight hours' setting, it will resist a tensile strain of about one hundred and fifty pounds to the square inch, and at the end of six months, its resistance to crushing is equal to that of most granites. It is best not to use the cement in too thick masses. Where the cavity to be filled is more than an inch deep, it is best to fill it nearly to the surface with pieces of stone in cement, well fitted in, and finish with the zinc cement.

DECORATIVE GLASS.[1]

THE remarks I have the honor to lay before you, ladies and gentlemen, this evening, are descriptive of a beautiful and fairy-like art. I call it fairy-like, not only because of the delicacy and beauty of the material used, but because of the simplicity of its manipulation, and the rapidity with which its most attractive creations are effected. Glass is transparent as water, and, like the drops and jets of water, threads of it are crystallized into jewelled forms by the action of the air; and, again, light, brittle and destructible as glass vessels are, they are yet capable of outlasting many, if not most, of the substances out of which vessels can be made for our use.

Before proceeding to d'scuss the manipulation of our material, it will be necessary to show how it is made. Glass, says the late Professor Barff,[2] appears to be a mixture of silicates. The material is principally sand, with an alkaline substance, either a salt of soda or potash and lime; though in some kinds of glass, oxide of lead takes the place of lime. The scientific name for sand, or, rather, its principal constituent, is silica. This compound oxide of silicon, or silicic acid, when brought into contact with bodies of an opposite character, under suitable conditions unites with them and forms a salt. Now, silicic acid, at the ordinary temperature of the air, has no action whatever on carbonate of soda, but when heated sufficiently, the action becomes vigorous. When sand is mixed with oxide of lead (common litharge) they unite, forming a compound similar to that produced by the silica united with the soda. In one case a soda glass is formed, in the other a lead glass; the former is made with coarser or finer sand, according to what is to be made from it, such as common bottles, crown, sheet or plate glass. The latter kind is called flint glass, and is used for the finer works of the glass-blower — glasses, table decanters and glasses, and imitation jewels. It is more brilliant, colorless and transparent; it is also considerably heavier than window-glass.

In putting together the materials for glass-making of the finer kind, it is of great importance that the sand should be as free as possible from impurities. The Venetian furnaces are said to have been supplied from the coast of Syria, where the sand had been famed for its excellence from the days of ancient Rome. The sand now used for flint glass is brought from Alum Bay, in the Isle of Wight, and from Fontainebleau, in the latter case at high prices. The principal impurity found in common sand is some form of oxide of iron, which produces a green color, and the presence of iron is neutralized by adding black oxide of manganese. This reduces the oxide to the state of peroxide. Peroxide produces a yellow hue, and only to a slight degree. It is by no means easy to adjust the quantity of black oxide of manganese to the amount of iron in the sand, and if in excess, a purple color is produced. Much of the window-glass of ninety years ago is of a purple hue on this account. If rightly proportioned to the iron in the sand, no appreciable color is imparted by this substance. I believe that at present arsenic is considered, for various reasons, an equally effective and more manageable agent for this purpose than black oxide of manganese. The proportions quoted by Professor Barff for window-glass materials are: Sand, 4; sulphate of soda, 2; lime, about ¼ to 1, with a small quantity of carbon as charcoal. For flint glass: Sand, 3; red lead, 2 to 2½; carbonate of potash, 1½ to 1¾, with a little nitre, or saltpetre, as an oxidizing agent. The analysis of Pompeian glass gives: Sand, 4; soda, 1; lime, ½ (about); and a small quantity of alumina. Here the proportion of soda seems much less, and lead does not enter into the mixture. Different makers vary these proportions, and have mixtures of their own. If soda is in excess there is apt to remain a certain amount of it not properly reduced, and it is gradually dissolved by the action of the weather, making those holes which we see on the outside of some old window-glass. Sometimes we see on the surface a delicate film, which, seen in a certain light, is opalescent. This is also noticeable in glass that has been long buried, from the action of salts in the superincumbent earth, and shows that the due proportion of the materials has not been observed, and a perfect union has not resulted. It would be very desirable that careful experiments should be made by chemists, so as to save glass-founders from errors of this kind, as far as they can be made avoidable.

The materials are partially heated together, and are then called fritt. The fritt is afterwards put into glass-pots, made of fire-clay, in the furnace, where they are gradually fused, and fresh fritt is added till the glass is in a doughy state, not too liquid, in which condition it is known as metal. The pots for window-glass are uncovered, and the fire passes over them. Those for flint glass are covered over, leaving an opening in front for the use of the blower. A scum which rises to the surface is removed by iron ladles. A small quantity of broken glass is thrown in at intervals to complete the fusion and purify the metal.

Various colors are imparted to glass by the mixture of metallic oxides: red, by copper, as well as green and blue, according to the nature of the oxide: blue by cobalt. A beautiful pink is produced by oxide of gold, and, if used in large quantities, a fine red. Oxide of iron produces either green or yellow. Yellow, of various depths, is also produced by silver, but not by melting it with the metal. Oxide of silver is mixed with chalk, or some similar substance, and laid on the glass when cold, and it is then heated to a dull red, and the yellow stain is pale or deep, according to the quantity of oxide used. Red produced by oxide of gold, and copper-red are both coated over clear glass heated and blown into sheets. Purple and black are produced by black oxide of manganese. There are, however, many varieties of hue which are produced in different factories, some, probably, by accidents of the melting. It is of these materials that painted glass is made, but, as glass painting belongs rather to the painter's art, I shall not attempt any discussion of it here. As we see it in old church windows, it is the very romance of mediæval painting, and its special claims depend on the mellowness and beauty of the glass prepared for it.

Besides glass colored in the metal, gold-leaf can be laid on glass, etched and coated over with a thin film of glass. Glasses colored, but more or less opaque, are used in small dies on walls and vaults, for another kind of painting called mosaic. Light is reflected by this kind of painting, but it is transmitted in many hues by painting on colored glass in windows. The Whitefriars furnaces turn out a peculiar kind of glass, opaque, and having the look of unglazed porcelain, on which designs are drawn and painted with enamel colors, and these paintings are put into muffles (small kilns, which can be gradually heate l at will), and burnt in as in window painting. Like mosaic work, it is a kind of decoration applicable to wall-surfaces, in which it can be imbedded. I notice it here because this kind of glass is the result of a peculiar process. It may be produced by breaking up glass of the color required, and fusing it over again. What sort of intensity of heat, or period of time may be required in its fusion, I do not know, but it may be produced in another way. I shall have to advert presently to the process of annealing, or the very gradual cooling which glass goes through before it is fit for use. Now it seems that glass, when it leaves the furnace, takes a long time for its particles to arrange themselves. If glass vessels have not been properly annealed, they are extremely brittle; they crack easily if hot water is poured into them — more easily the thicker the glass is; the inside heats and expands before the heat has reached the outside. Thin glass is less brittle. But if thick glass has been carefully annealed, it is less liable to such accidents. If, on the other hand, glass is kept at too high a temperature in the annealing furnace and for too long a time, it loses its transparency and becomes crystalline in texture. This process is called devitrification. A kind of porcelain was at one time made of glass in this state, and went by the name of Réaumur's porcelain. Devitrified glass, as it can stand the weather, if painted and if the incorporation of the enamel colors used upon it were thoroughly understood, might, I suppose, be used not only for internal but for external wall-decoration as well. As far as I can learn, such a complete incorpora ion of enamel ornament on glass of whatever kind has not yet been arrived at, the enamel having a liability to wear off the surface, and the process is perhaps still to be examined by practical chemists. So far, then, as to the composition of the various glasses in use.

Next, as to its manufacture. I have compared it to the crystallization of pure water by the action of the air, for it is the breath of the workman that puts life and beauty into the lumps of soft metal that he draws out of the pot. There are several distinct operations in the decorative treatment of glass. It is blown, cast, moulded, stamped and cut in a variety of ways when cold. The oldest and the simplest process is that of making simple bottles and window-glass — which is of various qualities. This is how sheet-glass. for instance, is made: The workman takes an iron blow-pipe, from 5 feet to 6 feet long, and from ¾ of an inch to 2 inches in diameter according to the weight of glass he intends to work. He dips this into the glass-pot, gathers by a twisting motion a lump of doughy metal at the end of it. He then blows into it till it swells out into a pear-shape. He then rolls it on a slab of marble or of smooth iron, called a *marver*, so as to keep the shape and thickness he requires. It is then swung from side to side over a pit till it has drawn itself into a length sometimes of fifty to sixty inches, and has assumed the form of a true cylinder. It is again heated in the furnace. The cool end of the tube is stopped with the finger, and the air expanding within the cylinder bursts the heated end. The workman withdraws it, and while hot rolls it round, and with an iron tool brings the burst part to the diameter of the cylinder. The other end is detached from the blow-pipe by drawing a thread of hot glass round the shoulder, and after removing the hot glass, a cold tool causes it to crack all round. The cylinder is scored down its length internally with a diamond, and placed in a flattening kiln; when soft, it is opened out with wooden tools where the line has been scored; it is then flattened out on the smooth floor of the kiln. Glass so

[1] A paper by John Hungerford Pollen, read before the Society of Arts, and published in the *Journal* of the Society.

[2] British Industries, Glass, etc.

flattened is sometimes polished, and is then one kind of plate-glass. Commoner crown glass is made by opening the globe blown by the workman, who then heats it again, and trundles it round till the heated sides of the globe start suddenly round into a great disc, with the thick bull's eye in the middle. These kinds of glass are annealed and cut up for window-glass. Plate-glass is not blown, but is either ladled or poured on an iron table, which has edges to suit the required thickness of the glass. It is then rolled with iron rollers. When cold, two plates are brought into contact with each other, and the two surfaces ground with sand and water. They are finally polished by machinery, a process formerly done by hand.

These may be called elementary operations. Decorative blowing, which is now to be considered, is a more intricate process, for the working of which long training and skill, readiness and confidence, are required. The workman's tools are of the simplest kind. He uses a blow-pipe as described, rough tongs, scissors, with short, broad blades and compasses, to gauge his work as he goes on. He has a marver to roll his metal on, and a chair, of which the arms are horizontal iron rails, on which his blow-pipe, or his pontee, or solid holding-rod, can be revolved by one hand, acting as a rough-and-ready turning-lathe.

Let us see how he makes one of those elegant glasses which I shall speak of as Venetian glasses, because the Venetians made them two or three centuries ago in such endless variety, and they now form the glory of glass collectors. Here, for instance, is a decorated glass such as I have had the great pleasure of seeing made in the glass-house of Messrs. Powell, in Whitefriars. Withdrawing, with the blow-pipe, a small lump of not too liquid glass, the workman blows it into a bulb, and the general shape — convex or conical — is given to it. He then takes a fresh piece of glass to make the stem; sits in his chair and keeps revolving his pontee (holding-rod) with glass at the end on the arms, as if in a turning-lathe. By the use of his tongs he contracts it where he wishes, forming neckings and bosses. If he is working from an original which he wishes to copy, or from a drawing he has prepared, he regulates the measures of his new stem by applying his compass to the drawing and to his work. Glass cools too quickly to allow the modelling of such a stem without reheating the material from time to time. If it has considerable length, he has to keep turning it round in the furnace to avoid its drooping. It is then again brought to the chair, and the lathe action renewed, till this portion of the glass is completed.

Next, an assistant, with a pontee, armed with a dab of hot glass, sticks it to the centre of the bulb, the workman detaches his end of it from his blow-pipe by touching it all round with a wet iron. The pontee, with the bowl of the future glass, is reheated. The operator trims the edges with a pair of scissors, rolls it on the warmer, and shapes it out with his tongs, turning the bowl of the glass round as he does so. The bowl, or body, has then to be detached from the pontee on which it has been kept, the stem heated and the two attached. If the glass has wings or handles of white or colored glass, a small lump of the required metal (as the fused glass is called) is brought by an assistant, the modelled glass being kept at a proper heat. The workman takes a pinch of it with his tongs, draws it out to the thinness he requires, sticks it in its position on the glass, draws it out to a thread or ribbon, forms a loop or loops in it, and brings the end down again to the bowl or stem of the vessel. He pinches this ribbon in at intervals, or thinning it out into a thread, he loops it in and out as he wishes. We see, on some old glasses, the wings, head, claws and feathers of the two-headed Imperial eagle of the German Empire. Many of these devices are highly complicated, and when the rapid rate at which they are necessarily executed, and the lustrous crystalline beauty of the finished vessel and its decorations are considered, there is no violence in the comparison of this beautiful art to the action of the northern wind on the raindrops, and the tender spray of the water-fall. But while these beautiful crystallizations grow dim and disappear when we grasp them, the marvels of the glass-blower's art may outlast the lives of many generations.

I have spoken of clear glass, whether white or colored, but glass vessels were and are still made by the Venetians, and at Whitefriars and elsewhere, in which opaque white glass is inserted, taking variously shaped filigree patterns, twisted, network, and collected into beads or balls, and similar arrangements in great variety. I shall show you presently in the lantern some examples of this from the South Kensington Museum. This white goes by the Italian name of *latticinio*, or milky. The vessels made in this material are usually striped, that is, made of bands of clear glass, and of glass in which these white lines, variously twisted, are contained. How is this made?

Opaque white, or enamelled white glass, as it is sometimes called, is made by the addition of oxide of tin, and the metal is then drawn out into little sticks called canes, as in these specimens from Whitefriars. To make these into Venetian *latticinio* or filigree, a number of short pieces of cane are arranged at intervals round a jar and kept, perhaps, in place by a little sand at the bottom, or accommodated to slight flutings inside the vase. A lump of heated glass is then held by the blower just in the middle of the vase. For some time he merely so holds it that it may bring the little canes up to the requisite heat, so that when touched by the heated mass they may adhere to it. He then blows and expands the heated glass till it touches and takes up the white canes. The mass is then heated, drawn out and rolled on the marver till the canes are flattened and thoroughly incorporated into the sides of the clear glass in the middle; the whole is then coated over with clear glass. This lump is then pulled out and shortened, one man holds it with one hand on the arm of his chair, while another gradually draws it out and twists it. During this process he varies these twists by holding the glass in at intervals, and other clever turns of the hand. The white lines may run round a central white line, inserted previously into the clear glass, or round a colored one.

When these filigree canes have been twisted and drawn out to the thickness of a quarter of an inch or so, short lengths, perhaps of a series of these compound canes of different patterns, are themselves incorporated into a fresh centre of clear glass, and blown into a globe or a vase, which then has alternate stripes of filigree and clear glass running up its surface or spirally round it. We see dishes and vases in which the white or colored lines cross each other, in what we may call engine-turned reticulations. One method of this operation is said to be by blowing a globe of glass out of a piece in which the white has been twisted spirally, and in one direction. The lower half is then pushed up inside the upper, and a reverse set of spiral lines is added, and the glass thus doubled is dealt with to form a vase or dish, but I have never seen this operation performed. Many of the larger glass vases have medallions of colored glass on their shoulders, or round their sides. This is done by laying a lump of heated glass in the place desired, and stamping it at once as if with a seal on sealing wax. Vases are sometimes made with grotesque animals, such as stags, fishes, or birds within them, or else the glasses themselves are in those shapes. These grotesque forms are said to have been intended for the mysterious pharmacy of the alchemist. The visitor to large museums will see an endless variety of these blown, twisted and variegated vessels, dishes, bottles, etc., not to speak of the beautiful chandeliers in which the branches are interspersed with stems bearing colored flowers and crimped leaves. Chandeliers and complicated looking-glass frames are made up of many different parts, the making of which is simple enough when we examine these compositions in detail.

I must now advert to a mixture of fragments of colored glasses welded in the metal state and veined in the manner of marbles, out of which ornamental glass vessels are blown; this is called *schmelz*. Glass is also made to take up minute pieces of gold-leaf or of copper, which are incorporated into the mass, and forms a costly-looking material, called *avanturine*. Many of the decorative additions to Venetian vases, etc., are made in avanturine glass. Another product of combined pieces of glass consists of sections of cane arranged as stars and flowers, and bedded in clear metal, forming a mosaic. Paper-weights and other masses of this kind of glass have long been made by the glass-makers of Murano for the European markets.

The processes we have been considering are properly the work of glass-blowers, but glass vases have been made in Venice, and still more in Germany and other northern countries, who borrowed the art of glass-making from the Venetians, with heraldry and other ornament painted on the surfaces with enamel. The colors are made up with some metallic flux, or with glass reduced to powder, which melts, when exposed to a moderate heat, sufficient to heat the surface of the vessel, and becomes incorporated with it.

Cylindrical vases, decorated with enamelled paintings, made in Bohemia and in various parts of Germany are to be seen in most collections. Other methods of decorating glass are by moulding, cutting and engraving. Glass-moulding is done by blowing the glass into a mould. Moulds are now made of metal, but I believe it is a question whether in ancient glass wood was used, or wood coated with some composition. In any case, glass is blown into the mould till it reaches the sides and receives the pattern or design prepared for it. The mould, which is hinged in two or more parts, is opened as soon as the glass cools, and the vessel retains its fire polish.

Cutting is performed by applying the glass vessel to the edges of a disc of sandstone with a sharp edge, revolved by a treadle, and on which sand and water are made to trickle. The cuttings are next smoothed on a disc of slate or some fine stone, and are finally polished on a grinder of cork with putty made of some product of lead. Facets, stars, and other simple patterns are made by these means. For more delicate work a copper disc is employed, not larger than a shilling, or smaller still, and finally, the graver.

Cutting of a fine kind, in elegant designs, is found on many of the Venetian vessels of the sixteenth and seventeenth centuries. There are vases in the Kensington Museum of German-Venetian workmanship, with figures on the surface, etched, apparently, with a diamond, and of the utmost fineness and delicacy.

Venetian seventeenth-century looking-glasses are found with figures cut on the backs, which are left rough and show like dead silver. When certain designs, such as scrolls, foliage, and the like are polished as well, and in all their parts they add an extraordinary delicacy and lustre to the glass or vessel on which we find them, and impart to it some of the charm which belongs to cut and polished rock crystal. So far, then, as to the general operations of the art now under discussion.

Considering, next, the knowledge of chemistry and the connection of that science with the making of glass itself, one would be inclined, at first sight, to say that glass can only be the product of a scientific age. As a science, chemistry is of comparatively modern growth. Yet glass-making has a far-reaching history. In many respects the composition of the material, and certainly its artistic treatment, has been carried farther by the ancients than by ourselves. The

antiquity of glass is proved both by paintings in the ancient tombs of Egypt of the fourth dynasty between three thousand and four thousand years old, and by specimens still sound and entire, which have been recovered from them and can be seen in the British and other museums. Whether Egypt is the country of its actual invention is disputed. The Romans claimed it as an accidental discovery of Phœnician traders. As a fact, the art was carried from Egypt to Syria; to Sicily; round the Mediterranean, to Asiatic Greece; and finally, to Rome. Alexandria continued for a long period a principal seat of the manufacture. Tyre was another. It was established on Monte Cœlio in Rome and elsewhere in Italy in the time of the early Cæsars, and the beautiful colored drinking-cups then made or imported were highly valued by them. A story is told of a maker, who, when the Emperor Tiberius spoke of the fragility of his wares, dashed down, or let us suppose let fall, a glass cup, which was uninjured by the action. It is conceivable that the process of making unbreakable glass, as now practised, may have been known in those days.

Among the productions of Egyptian glass-makers must be reckoned that of artificial precious stones. Some of them were of an astonishing size: A statue of Serapis thirteen feet high, of emerald; an emerald given to a Pharoah by a Babylonian king, six feet by four feet, in this case of Asiatic manufacture. Some large pieces survived those ancient times and are still surviving in church treasuries, which were believed to be colossal emeralds in the Middle Ages, and were highly valued accordingly. We hear of a table made of a single emerald, found by the Arab conquerors of Spain.[1] The colors of such slabs or blocks of this material as are now extant, are of extraordinary richness and beauty.

The Kensington Museum possesses a number of dishes, vases, bottles, and fragments of green, amber, amber-brown, sapphire-blue, and schmelz of great beauty. The canes, of which the mixed-glass vases contain sections, are twisted and rolled together in the manner described as regards Venetian glass, but far surpass such examples as I have seen. They can scarcely be represented by photography. The light must be seen through them and on them in order to the full appreciation of their splendor.

The Romans were luxurious and costly in the decoration of their houses, especially of their dining-rooms, in which the important business of the day was carried on. They devoted much splendor to the ceilings of these rooms, which were panelled and coffered in various ways, and the enclosed spaces were gilded and inlaid, among other materials, with little decorative mouldings of colored glasses. There are fragments of sapphire-blue moulded-glass decoration at Kensington which seem to have been made for this purpose.

Among the more costly glass productions of ancient times we must reckon dishes and vases, cut, like cameos, from colored glasses coated with opaque white glass, the parts not required for the design being cut down to the translucent ground. The Portland vase in the British Museum is a beautiful example. A vase of two colors of glass, opalescent, the designs in high relief, was exhibited at Kensington some years ago by a member of the Rothschild family. There is a fragment of a figure, the drapery only, modelled in very low relief on blue ground at Kensington. The drapery shows that the entire figure must have been nearly a foot high.

Sefer Nameh, an Oriental traveller, who wrote a journal between 1035 and 1042, speaks of green glass made in the suburbs of Cairo in his day and of furnaces at Tripoli and elsewhere on the Syrian coast. Of Oriental glass, the most noteworthy examples that can be referred to are the lamps formerly hung in the Arab mosques of Cairo and other cities. Indeed, few more beautiful examples of decorative glass can be seen anywhere. They are in the form of bowls on flat stands with wide funnel-shaped necks and loops on the shoulders for suspension. They appear to have been made of common glass. In the structure of it you observe specks and bubbles, and they have a horny look, perhaps from their age and the constant presence of oil about them. The decoration consists of bands of red or blue enamel color, and legends written in fine Arabic characters, clear glass on the colored bands and *vice versa*. These legends express pious ejaculations, quotations from the Koran, and the names of reigning princes or donors. There are several examples of these lamps at Kensington, and some of small size of other shapes. A large collection has been made at Cairo, and some of those examples were lent at one time for exhibition at Kensington. The glass houses of Alexandria, Tyre, and other Mediterranean cities, turned out these beautiful lamps during the fourteenth and fifteenth centuries. But they were made also in Venice to order during the same period. The Persians were the chief customers. Persian workmen were possessed of extraordinary skill in repairing broken glass, but were not successful in making these lamps for themselves. Persian glass vases and *mille fiori* work of great beauty will be seen in the South Kensington Museum.

The ancient Roman industries and the best artists of the fourth century were transplanted bodily by Constantine to his new capital Constantinople, and it was from the Greeks of the Eastern Empire that the glass-makers' art was recovered in the Middle Ages, when Italy emerged from the ruin of barbarous invasions. The Venetian islands offered a refuge for such refugees from the mainland as they could support. It is claimed by Venetian annalists, and I incline to believe justly, that this glass industry has been preserved by the Republic, even from Roman times. However that may be, it seems to be from the Greek artists who were received in Venice after the sack of Constantinople, at the beginning of the thirteenth century, that the finer treatment of glass took its renewed traditions. This industry grew and prospered. Two centuries later, the Eastern Empire was overthrown, and a more general immigration of artists and learned men took place into Western Europe. It is from this time that the Venetians encouraged the manufacture not only of beads and imitation jewels, but fine glasses and vases. The island of Murano became the chief seat of the glass-houses of the Republic. Severe laws were passed forbidding the emigration of skilled workmen, and a sort of home rule was granted to the little island, and many social privileges were conferred on the leading members of the guild, or craft. We have already spoken of the kind of work produced. When the fashion of cut-glass came in during the last century, Venetian glass-making declined.

German princes and governments took great pains during the sixteenth and seventeenth centuries to introduce Venetian glasswork within their own borders. Workmen were enticed and smuggled into these States, and some fine blown-glass vessels were made in various countries. It has been maintained that the fine Venetian pieces on which the Imperial eagle and other German insignia are worked must be of German origin, but as glass was made for half the princes and noblemen of Europe in Venice — in many cases to special order, in others as diplomatic presents from the Government, we ought, I believe, to credit examples of this kind to the makers of Murano. It is true, however, that in Germany and Flanders, Venetian vases and glasses, more or less decorated, were produced, but the very finest examples were probably imported. As regards German seventeenth-century glass, heraldry and inscriptions in enamel painting, or engraving, form its chief decoration.

The Government of Louis XIV took as much pains to smuggle glass-makers into France as it did for lace-making and other highly skilled industries. Fine examples of cut-glass chandeliers, looking-glasses, blown glasses, and other old French glasswork are still to be met with.

As regards our own country, the making of common window-glass was active from the seventh century. By the middle of the sixteenth it was established at Crutched Friars. In 1673, the Duke of Buckingham brought Venetian workman over, and settled them in Lambeth. Their principal work was making mirrors of cast or flatted glass, with slightly bevelled edges, and carriage windows. Such bevelled glass was used for glazing the royal palaces and costly houses. Panes of it (of the seventeenth and early eighteenth centuries) can be seen now in the sashes of Wren's portion of Hampton Court. Wine bottles, to judge from an old one in our possession, were squat bulbous quarts, with the family crest stamped on the shoulder, wine being imported and bottled at home. The glass industry was for a time protected by State bounties.

The last century saw the end of many declining local industries. Twenty years of war ruined a vast number of porcelain, glass, and other establishments. England had fine potteries still, and exported these wares to the north of Europe and to the south. It is to be met with in Germany and Holland and in Spain, but decorated glass was confined to cut table glass, chandeliers, and other work, of which cutting is the chief ornament. Such chandeliers were to be seen in all theatres, halls, and ball-rooms. The material was clear and lustrous, the prismatic pendants and hanging chains brilliant and effective, though not equal to the earlier productions of France. The brilliancy of these chandeliers goes far to redeem their weight and troublesomeness in cleaning. So, too, of table glass, but its great weight is a serious disadvantage, and its decoration is merely mechanical.

Great pains have been taken for some years past by our London and other manufacturers both with the crystalline and brilliant equality of their flint glass, and in the manufacture of colored glasses. A great impulse for the latter was given by the revival in France, and still more, and even passionately, in England, of mediæval art. Church restorations at the expense of the Government in the former country and by private persons in our own led to the cultivation of glass-painting, almost a lost art till of recent years. Willement and Gerente are names honorably connected with that movement and the method of attaining the splendid hues of old window-glass has been carefully studied. Commoner, inferior and less crystalline glass is a better vehicle for color than flint glass, perhaps a more effective material for Venetian blown work.

Some years ago Sir Henry Layard, Sir William Drake and others came forward to try and put new life into the glass-works of Murano. They found funds, looked up workmen who still represented the old traditions, and so, under the energetic lead of Dr. Salviati, the decorative glass-blowing of Venice has been revivified. All the old methods and many of the elaborate designs of the old artists have been put in practice. These Venetian processes have been carefully followed by some of our own leading glass-makers.

Within the last few years some very beautiful cameo glass-cutting has been executed, principally, I believe, by artists in the Stourbridge works. Some very successful examples were shown at Kensington in the Health Exhibition in 1884. There evidently is a hopeful future for this special branch of sculpture.

This brings me round to the point from which I started, the art as we see it now in our factories at home and in Venice. Both there and here the aim is the same, to restore the old methods and work

[1] "*Ancient and Modern Furniture*," lxii.

them out with the old skill. Modern chemical knowledge ought to put us at an advantage over our ancestors as regards methods and compounds, and to make it clear whether modern furnace-heating is better or worse than the former practice. But that rule-of-thumb which comes from long and unbroken experience is not to be recovered easily or soon. Seeing what accuracy of eye, what delicacy of touch, what grace in the action of the hand, are required for the finer productions of the blowing-iron, it may be doubted whether the Italian has not a natural advantage over our northern workers. Joints and muscles matured under a southern sun are more supple and elastic than the hardier and stronger arms of the colder latitudes. But the feeling and spirit that inspires the artist emanate not from his fingers, but from his mind. I have no desire to enter on the thorny path of abstract principles regarding this or other arts. Too much has been said on that head, and said a great deal too often. I prefer to speak of the art of glass-making, so pure, so fresh, so luminous in its creations as a tradition, with some three thousand years or thereabouts at its back. Though the Venetians throw themselves into the Greek traditions as they came down to them, I have little doubt but that they pushed the art of blowing and manipulating fused glass beyond any perfection attained by the Greeks of Byzantium, perhaps by the ancient Greeks; but of that we have not sufficient ground for judging. They do not, however, seem to me to have come near the ancients in compounding those precious materials imitative of emerald and other costly crystals, out of which were made the cups and bowls to which I have already referred. I think this is a kind of perfection from which the Venetians and we ourselves are still far removed. So we still are from such sculpture as we see in the Portland vase.

Now for a word or two as to our modern English-Venetian and as to modern Venice-Venetian blown-work. Much of it is of great beauty, and where decorations of colored glass and avanturine are employed it is skilfully done. But comparing it with sixteenth-century work, we are struck by a glaring and over-showy look about it, and an absence of refinement. What we call good taste in art is a delicate and instinctive appreciation of the suitableness, the propriety and fitness of decoration, which accord with the natural limitations of the material employed. A glass or a vase is set off by a certain amount of ornamental detail of colored glass or of other decoration. But the color should be sparingly used and should not be of many, very generally not of two colors. The colored parts are like jewelry on a lady's neck. We must not ask her to suspend it from her nose as well as her ears, or load her with many colored varieties. Each addition will detract from the value of those already hung. Avanturine, again, is a gold glass, or passes for it. This material, so valuable in appearance, must not be, as it too often is, in such proportions as to lose its decorative value. As to cut-glass, chandeliers and table glass so decorated have a splendor of their own. But what are we to say to a huge throne, a sort of *tour de force* made of vast masses of moulded and polished glass, or to fountains such as I have seen in some of our vast international exhibitions? I doubt whether any absolute novelties are in store for us in this branch of human industry. But of lost ground we have still much to recover. The bane of modern artistic industries is the popular demand for a novelty, even though the novelty should be monstrous.

Shall we ever make again those masses of splendid material, jewel-like in color, containing something like crystalline light within them, and those colors, not only the primary and secondary colors of the Middle Ages, which indeed we already have, but those tertiary colors which the ancients contrived to reach?

Every generation has some qualities of mind which are its own, every nation has its natural aptitudes and aspirations. By these the traditions of art, and more especially of artistic industries, take a definite character if genuinely carried out. We read it on the surface of the production of ages and of nations, and when we see it we say this or that piece of work is of such and such a time and country. If we are faithful to the laws which trained the artists of older days, we shall acquire confidence and become artists in our turn. Our work will be thorough and have new life in it, though our ways will be old ways still.

ILLUSTRATIONS

[Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.]

THE ROTCH TRAVELLING-SCHOLARSHIP DRAWINGS. — PLATES XLIX., L., LI.

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BOOKS AND PAPERS

TO any one who is at all familiar with the masterpieces of Dutch art, or who has ever had even a passing interest in the art of etching, it seems almost incredible that so powerful a painter and so indefatigable an etcher as Rembrandt should have been held in very slight consideration as a master during his lifetime, and should have taken his present rank in the history of painting only within quite recent years. It seems so natural to admire the strong, eloquent canvasses which are now found in every gallery in Europe, and Rembrandt is so incontestibly not only the father of all etchers, but an artist who has seldom been equalled and never been excelled by any of his successors, that we can only wonder at the indifference which was such a constant annoyance to Rembrandt all of his life.

According to M. Emile Michel,[1] the greatest painter of Holland was born at Leyden, July 15, 1607, in a house situated within view of the city walls, and on the banks of one of the branches of the Rhine, from which, following the example of his father, he took his name of Van Rijn. He was the fifth son of a miller, Harmen Gerritszoon, and his father being in very comfortable circumstances, Rembrandt was put to the best schools and received the rudiments of an education intended to fit him to take part in the literary movement which was then beginning to be felt in Holland, especially in the University town of Leyden. But Rembrandt had no ambition to become a scholar. His special talents manifested themselves in so marked a manner that his father wisely took him out of school, which in those days meant little more than Latin and some abstruse theorems in geometry or philosophy, and left him free to follow the bent of his own genius. At the age of thirteen, he was placed under the direction of Jacob van Swanenburch, an artist of considerable local renown, but of little real merit, to judge by the few of his paintings still in existence. Three years later he went to Amsterdam, and entered the studio of P. Lastman, who appears to have been almost the only artist who exercised any decided influence on the young painter. It has been thought that from his last master Rembrandt drew his manner of massing the lights and shadows and contrasting strong tones. Though young as he was, he had learned to think for himself, or rather to study nature, until his thoughts became as spontaneous and natural as the warm sunlight which so captivated his boyish heart. He was only a lad of sixteen when he left Amsterdam and returned to his native town to study his art in his own manner, and nature was art to him in a way it had never been to any painter before him.

His first picture which bears a date was made in 1627, a "St. Paul in Prison." It shows careful study and an attempt at *chiaro scuro* treatment, but Rembrandt had not yet become himself as we understand him now. We find his life at this time was passed very quietly in and about Leyden, painting a little, studying a great deal and especially perfecting himself in etching. It is not known when or how he began with this medium, but it evidently came to him as naturally as painting, and a portrait of his mother etched in 1627 shows him to have been already past-master in an art that was at that time but little known. Rembrandt's etchings are never lacking in interest. He was always at his best in handling the needle and in the sharp black and white studies of even his earliest years he is untrammeled by any of the formalisms or cold Italian traditions which at that time still hampered the artists of the Dutch school. Indeed, it may almost be questioned whether Rembrandt would have developed in the lines he did in painting had he not been continually practised in etching, an art which almost obliged him to mass his shadows, to seek the essentials in a figure or a composition, to draw exactly and to make each stroke tell. He etched his mother, all his family, his friends, the family mill, landscapes, animals, everything that came under his observation, but in portraiture it was especially his own face that he chose for a subject, etching and painting it in all poses and under all lights; not as an amusement, for Rembrandt was too serious to play with his art, but as earnest study. He continued all his life to make portraits of himself — there are no less than fifty in the various European museums — and one can trace him through all the changes of his life, from adolescence to disappointed old age, and the series is full of pathos to one who considers the hopes deferred or abandoned which made his heart so sick at times.

In 1630, he returned to Amsterdam, and fixed himself there for life. By this time he had acquired more than a local reputation, and his first two years' work in the capital won for him a position among the best artists of the proud Dutch city. He was cited as the fashionable portrait painter — a doubtful compliment, perhaps — and when the celebrated Doctor Tulp wished to perpetuate the souvenir

[1] "*Les Artistes Célèbres: Rembrandt*," par Emile Michel. Paris: Librarie de l'Art, J. Rouam, Editeur.

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To be built on Cor. of Eighth Street and Washington Ave.
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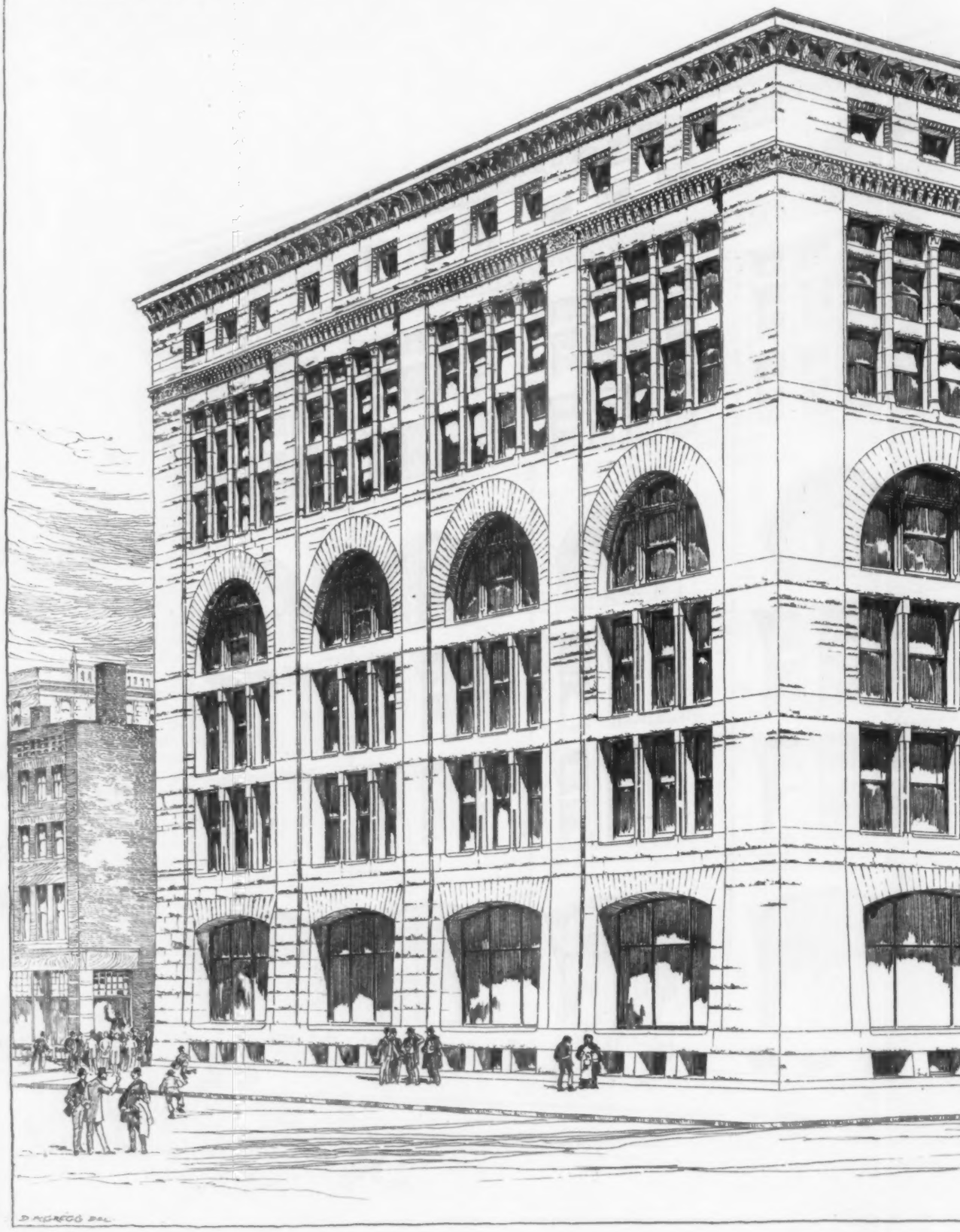

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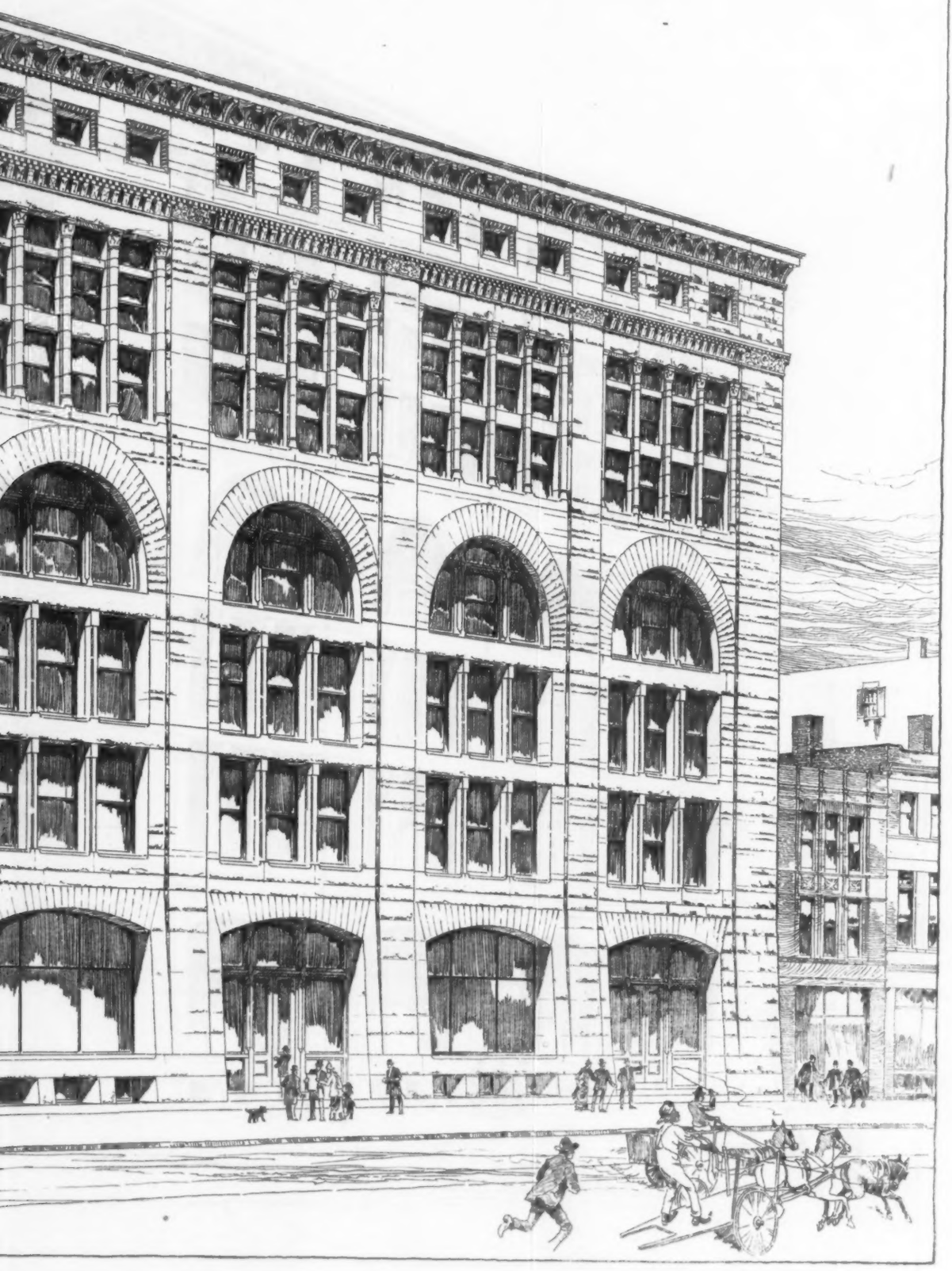

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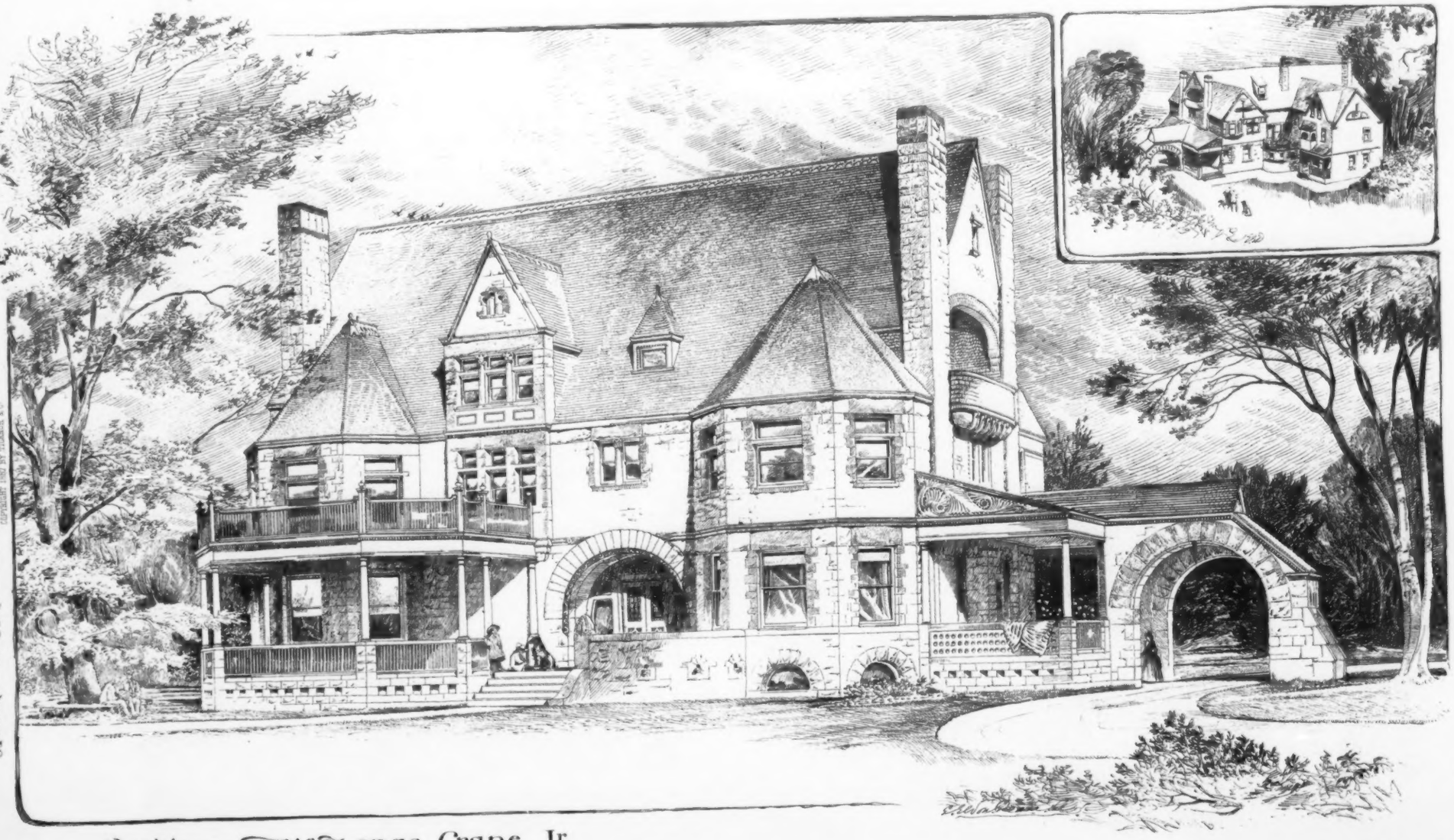

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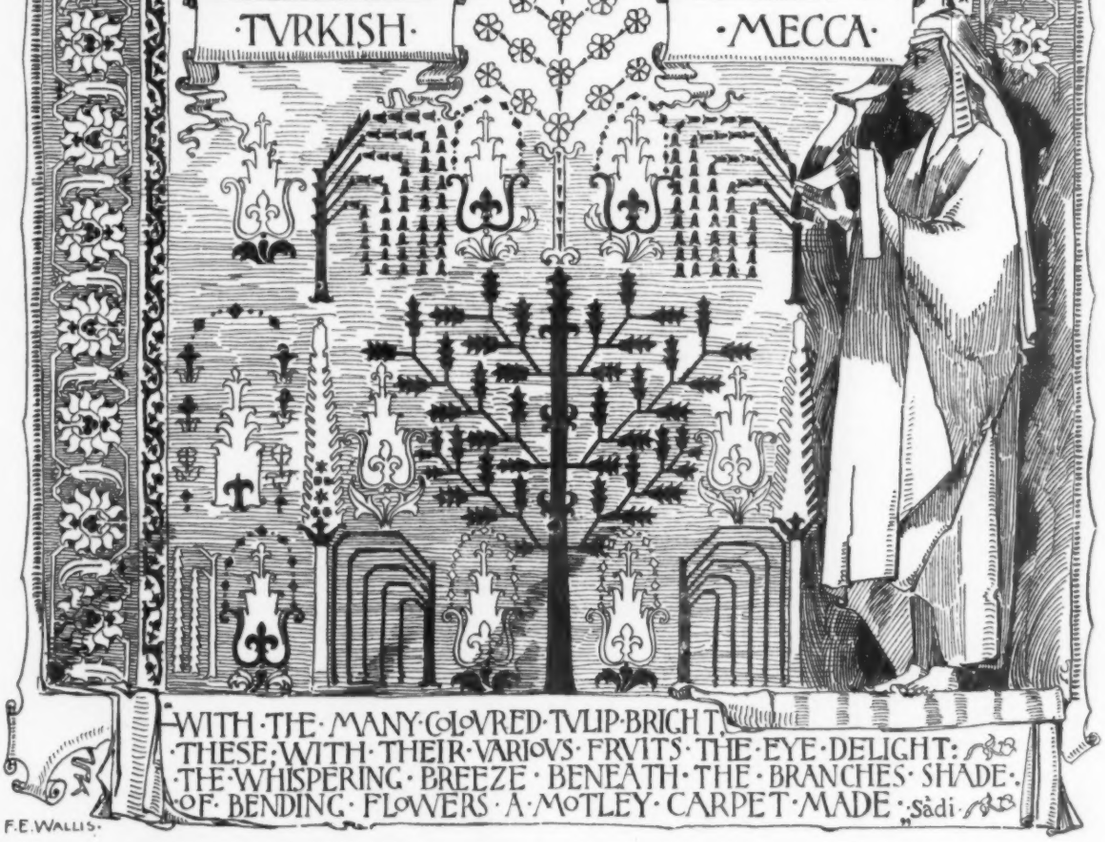

·WITH·THE·MANY·COLOVRED·TVLIP·BRIGHT·
·THESE; WITH·THEIR·VARIOVS·FRVITS·THE·EYE·DELIGHT:
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of his lectures before the guild of surgeons, Rembrandt was naturally chosen as the artist. The picture he produced, the famous "Lesson in Anatomy," is too well known to require any description. No one has ever looked at it without being struck with the wonderful ease with which so difficult a subject was handled, as well as with the manner in which the whole composition is centered so strongly on the hand which is performing the operation; and looking at it, one will almost instinctively draw forward, examine closely, and be infused with the earnest intent feeling which is so strongly marked on the eight faces grouped about the dissecting-table.

Rembrandt's later life may be divided into two periods, one terminating with the death of his dearly beloved wife, Saskia, during which time he at first gained in the esteem of the public and was honored by commissions of every kind including even a large historical painting, "the Peace of Munster," now in the Rotterdam museum. But even before his wife died he had ceased to be the artist *à la mode*. The matter-of-fact, straight-forward, Dutch mind had grown tired of his dark-toned paintings, and his so-called "Night Watch" painted in 1642, the year of his wife's death, though the master's largest and most celebrated work, was received very coldly and was indeed so little liked by the company of arquebusiers for whom it was painted that some of the members even refused to pay for the picture and wished to employ another artist. Thenceforth Rembrandt had always to struggle against coldness and public neglect, and as he had never been a careful manager his life seemed to grow sadder and sadder year by year. He ruined himself by careless disregard of money and reckless indulgence in curiosities and rare bits of bric-à-brac, until all there was left him of a once comfortable property was a mere pittance secured to him by the will of his wife. He lived almost alone with his son Titus and his Mistress Hendrickie Stoffels. He was harassed by creditors, threatened with law-suits, ignored by his fellow artists, at times almost forgotten by the public; but Rembrandt was an artist for art's sake. Through it all his brush and his engraving-needle were ever busy, and as he withdrew from the world he seemed to penetrate the more deeply into the nature which his glorious art enabled him to so fully appreciate. His best work, the "Syndics of the Cloth-makers," was painted when he was homeless, in debt, and over sixty years of age. It shows the wonderful vitality of his art instinct that he should have been able under such adverse circumstances to produce a masterpiece which M. Michel declares to be absolutely correct and perfect in every point. "Amateurs or critics, draughtsmen or colorists, painters seeking for realism or lovers of the ideal, all agree in recognizing this as one of the *chefs-d'œuvre* of painting." The picture is preserved in the Rijks Museum at Amsterdam.

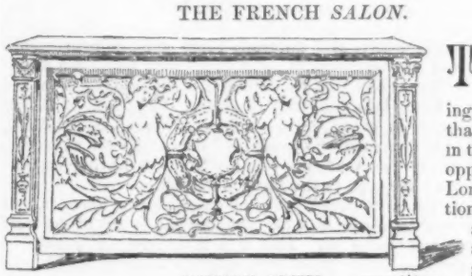
Rembrandt never ceased to work while he could lift a hand. One of his latest etchings is a portrait of himself which is extremely pathetic in its expression of worn-out, exhausted manhood, weary of life. His son died in 1668. Rembrandt himself broken-hearted, forgotten, alone, but still the greatest painter of his age, quietly went to his final rest, the only public notice of his death being the simple mention of his burial in the mortuary register of the Westerkerk at the date of October 8, 1669.

To rightly appreciate the scope and purity of Rembrandt's genius, one must study the galleries of Holland, for although his paintings are scattered all over Europe, his best works and the greater portion of his etchings have never left the city in which they were produced. By comparison with the Dutch artists of his time Rembrandt's genius seems to have been almost spontaneous in its development, a growth without cause or sequence; but when one remembers that Rubens and Van Dyck were his contemporaries in a country as near at hand as Belgium, and when one examines the host of Dutch paintings which make the boast of the Amsterdam and the Hague collections, it is easily seen that great as undoubtedly was his genius, it had its origin in the works of those about him. Rembrandt was the giant of a race of pigmies, the one Dutchman who could think broadly in detail, who could sacrifice parts to the whole if necessary, who did not consider the best portrait to be necessarily that which was painted most accurately; the painter *par excellence* of life and emotion, the only one in all the history of art, Titian alone excepted, who has been able to render the human body with such charm and poetic reality as he infused into the nude figure of Danaë, of the Hermitage collection. As M. Michel well says, "Rembrandt was worthy to become the admiration of our time, for he is the most modern of all the great masters. Through all the fluctuations of taste which have not spared other names his worth has never dimmed, but shines still in all its glory; and the universal accord with which he is honored is the most magnificent homage which can be rendered to a genius so original and so sincere."

WE must confess that we dread nothing so much, in discussion on any branch of social science or political economy, as the mention of "natural laws," or "*laissez faire*," or any of the other formulæ which imply that there is some innate and mysterious tendency on the part of human beings to do what is best for them, which is obstructed and counteracted by the practices of the party happening to hold different views from the person using the expression. Not being at all good at divination, we much prefer finding out what people generally do under given circumstances, and inferring from this what they will do again under similar circumstances, to looking in our own or any one else's moral consciousness to ascertain what they would do in the absence of any circumstances whatever; and our natural aversion to the acquisition of truth by inspiration is somewhat increased by observing that persons more gifted than ourselves, instead of acquiring in this way the same opinions on any given subject, generally develop views of extreme, not to say ferocious, diversity. The small study which we have been able to give to the subject as expounded by philosophers, has taught us that cannibalism, polygamy, robbery, free-trade, confiscation, democracy, absolute monarchy, slavery, anarchy, thrift, improvidence and idleness, are all manifestations of the working of natural laws, which, in the present state of society, are artificially obstructed, and we had arrvied at the conclusion after this slight glance into the possibilities of the free operations of such laws, that the methods of obstructing them were not only the most tangible, but the most desirable objects of research.

Fortunately, in this little book,[1] notwithstanding its title, we find only a few pages in which the "natural selfishness" of mankind, or the "universal reign of law," or the "natural and logical fulfilment," of a somewhat hazy prediction; and after those pages are skipped, which is easily done, we come back to a good deal of commonsense — such commonsense as a thoughtful business man can often talk about the social problems of the day, although he does not usually take the trouble to put it in print. It is rather unfortunate that more of those who can think clearly on such subjects, and who have information to communicate in regard to them, do not oftener make their reflections public. They suppose, no doubt, that every one else of average intelligence, except politicians and a certain class of newspaper editors, thinks just as they do; but the less experienced part of the public, being assured a thousand times a day by the demagogues that no one but thieves gorged with ill-gotten wealth objects to the general overturning and redistribution of society, without hearing any contradiction of this opinion, comes, at last, to incline toward a belief in it, and matters are allowed to go on for want of a common understanding between sober and conscientious people, until some great struggle becomes necessary to brush away the delusions cultivated so seduously by those who findl profit in the task, and to open the eyes of their victims, often by a painful process, to the realities of life. More than a hundred years ago David Hume, after describing one of the innumerable assaults mentioned in history, of poverty, ignorance, and stupidity, organized by plausible rascals, upon scattered and unprepared thrift, industry and sense, with the inevitable victory of the latter, observed that of all the disorders that afflict mankind, the tumults of the poor and ignorant were the least to be dreaded — at least by the industrious and well-to-do. In this age he would have added, mindful of the sympathy for the poor and humble which has become so remarkable a feature of modern life, that the distresses in which such agitations involve their ignorant victims are so great that no means should be spared for putting them on their guard against them; and to this end, as it seems to us, the circulation of such striking and unanswerable statements of fact as Mr. Atkinson, for instance, knows how to collect among people who are plied day after day by politicians with the statistics which Mr. Swinton and Mr. George evolve from their highly-deve oped imaginations, is nothing less than a duty. A few well-attested instances, like one which Mr. Wood mentions, where a plausible application was made to a State Board of Arbitration to fix the rate of wages in a certain manufactory, by a number of workmen, most of whom turned out not to be employed in this manufactory, while several of them were actually employed in a rival factory — which would, of course, have made a handsome profit out of having the cost of its competitor's goods fixed by the Board, while its own affairs were not interfered with — ought, and would, with men sensible enough to use tools or operate machinery, throw a very wholesome light upon the principle of regulating all the affairs of poor men by legislation, which is now so readily advocated by politicians; and there are many similar questions on which a similar illumination might be shed.

THE FRENCH *SALON.*



LYONNAIS COFFER. AFTER L'ART

THIS year's show is not so interesting as the last, that of 1886, and in this is just the opposite of the London exhibition. There is an immense amount of good work, both of drawing and painting, there are plenty of good portraits, and an enormous number of charming landscapes; but of subjects new, or novel readings of old ones, the exhibition contains little. The craze for the workman has not died out; not the honest workingman in his home life, or at his post of duty — but the drunken, besotted, brutal laborer at his cups, or handling a dirty pack of cards. This is realism *in extremis*, and however well it may be done, surely there can be but

[1] "*Natural Law in the Business World*," by Henry Wood. Boston: Lee & Shepard. New York: Charles T. Dillingham.

one opinion of the duty of rendering it, and sending it down to posterity as the canker of our times. That the misery of the poor may be a subject to paint all will admit, if only as a wholesome lesson to the rich; but no one is benefitted by an exhibition of brutality, for those who indulge in it never see the pictures.

Last year was a *Salon* of pigs; this one may be called the Boulanger-Hospital exhibition. The worthy minister of war figures everywhere — at the head of his staff, a little distance from his companions *à l'Empereur;* in portraits, great and small, and in sculpture; indeed, I was told by a friend that at one part of the garden a view of five statues and busts of the general can be obtained at one moment. I give the remark for what it is worth, not having had time to search out the truth. Then the hospital pictures, operations, clinical lectures, and sick folk everywhere; doctors, *infirmiers*, students, sisters, and other "helps" with sponges, basins, and instruments — and note, in all, the patient is a *woman*. These pictures strike one as being enlarged from photographs, and are singularly unentertaining to the ordinary observer.

M. Damoye has a charming bit of calm sea on a dull day, which is refreshing to turn to after the flare of M. Clairin's torches round Victor Hugo's bier, set up under the Arc de Triomphe. This is a pretentious picture of the usual mythical kind, and only redeemed by the truth of the red reflections cast upon the cuirassiers. M. Roll's great battle-piece is not an advance; there is a want of color in it, and the movement of the troops rushing off out of line strikes one as being a strange example of the want of discipline. The troops and the officers are marching along as a reserve called up; the battle is waging all about; but the men in the rear seem to be dashing off on their own account — true, it may be for pictorial effect. Mr. Hitchcock's "Tulip Culture" is a clever and original piece of color, and a word of praise ought to be accorded to M. Dupré's cattle. M. Duez has expended a great deal of paint on a large area of canvas; but his grass is metallic, his cattle are wooden, and his moon is a pink wafer. A pathetic picture is M. Pelez's "*Nid de misère*," two poor little waifs cuddled up in a miserable corner, covered over by an old ragged coat. The expression of the sleeping child, worn by hunger and misery, is very true. M. Pille has gone into a new line in a corner of a studio, the artist at his easel with diverse sketches all about.

But the picture which holds its own above all others is M. Benjamin Constant's "Theodora." It is a perfect *tour de force*, and a wondrous example of the painter's cleverness. The empress is seated on the marble throne with the white disc behind her, which appeared in the "Justinian" of last year. Her arms rest on the sides of the throne; the background is mosaic. Not the least admirable part of the picture is the treatment of all this white marble, which, lending itself as it does to reflections and reflected lights, ceases to be white, and becomes of a beautiful rosy, mauvey, yellowish tinge. Theodora is crowned, and wears a robe of a dull green with a front of gorgeous golden embroidery; the whole ornamented with a mass of precious stones. Her outer mantle is violet velvet trimmed with gold. Now, from this description one would say that the face would lose its power. Not at all; it is as forcible as if the gorgeous coloring were absent. Note, too, the admirable painting of the emeralds. Mr. Ruskin somewhere points out the cleverness of the painting of an emerald or a pearl in some picture (I think Paul Veronese's "Darius,") but surely, even that critical writer would scarcely deny that Constant's jewels excel Veronese's. The only part of the picture I should take exception to is the hands; they are, perhaps, rather black and wooden.

An excellent portrait is M. Salanson's of M. Léon le Port in his gorgeous red robe trimmed with fur, that of the Sorbonne. M. Rixen's "*Laminage de l'acier*" is clever in the movements of the men, stripped to their waists, pulling out the ingots from the furnace, which throws a lurid glow upon them. M. Rochegrosse's "Salomé" is another splendid piece of coloring. The King is reclining upon a couch before which are many fruits and wines placed upon fabrics of the most gorgeous colors. Below the steps the girl dances, and behind are a set of courtiers at another table, behind which is a curtain showing above it some golden light striking across the pillared hall. It is a small picture, and naturally there must be more confusion of stuffs and personages then in a large one; still, even allowing for this, it strikes one that the figures are somewhat lost in the surroundings. But it is a fine study of color. The death of Cæsar is a brutal picture in every sense — subject, drawing, composition, and painting. M. Salomon's "Cassandra" does not look as powerful here as it did in the Academy, possibly from its having no surroundings of the same type in the London exhibition.

Mr. Pierce's "St. Geneviève" has some good coloring about it, and the sheep are well painted; so is the girl, but she is not of the stuff St. Geneviève was made of. This is a little common *gamine* of a Parisian suburb — rather gross than spiritual looking, a girl who might do very well in the capacity of shepherdess, or *femme de ménage*, but who never would have arisen to the heights of a St. Geneviève. This realistic treatment of sacred subjects is a mistake. M. Deschamp's "Adoration of the Shepherds" is full of character, but of the wrong sort. This girl is no beatified virgin, but rather a *Parisienne* worn out by poverty and starvation; and the shepherds are the sweepers and waterers of Paris streets. Again, the "Jeanne d'Arc" of Mr. Lucas has the same defect. That Jeanne was a peasant is true enough, but that she must have been something much more than a peasant is evident from what she did. The dull dense country-girl in this picture never would have become that grand character, the deliverer of France, and it is just that something, the soul, the mind, or whatever it may be, that a painter ought to try and depict when he touches on these subjects. There is nothing in the expression of St. Geneviève or of Jeanne that distinguishes them one atom from the "*Bergères*" who abound on all sides of them. It is a pleasure to turn from M. Gervex's "*Avant l'operation*," with all its surroundings of doctors, instruments and sponges, to Mr. Bridgman's "Algerian terrace." M. Dautan continues in his atelier of sculpture — this year "*Un moulage sur nature*," the model being too natural, that is to say, not of perfect form, but the picture is clever and well composed. M. Dagnan Bouveret's portrait is one of the best pictures in the exhibition; crisply painted and beautifully modelled, it recalls some of Bandry's small portraits in its richness of tone. His "Pardon" is a fine study of Breton peasants, as full of sentiment as Breton's pictures of similar subjects but with less sentimentality. M. Henner has made a mistake in calling his innocent-looking little girl "Hérodiade." She is charming in expression and could not by any means be the bearer of the trencher with the Baptist's head. In the same way, one may take exception to the "*Créole;*" she bears a strong family likeness to certain "Magdelens" just as the "Hérodiade" does to "Fabiola" and others. But that does not detract from the masterly painting, the refinement of the work, and the perfect drawing. M. Henner's work looks so slight, but the modelling is most careful and studied.

One of the few pictures with any real religious feeling is M. Guillon's "*Arrivée du pardon de St. Anne de Fouesnant à Concarneau.*" Two sailors are pulling a boat ashore, in which are seated some girls in white muslin and lace caps, holding a gilded statue of St. Anne. Behind them, coming across the bay, is a fleet of boats filled with persons bearing banners. The sky is rose-colored, which is reflected on the sea; some boats have their sails set. The arrangement of color and the grouping of the boats are both very good, and the blue-white of the muslin gowns is a perfect study of white under the condition of a bright sky behind it. So, too, the expressions of the girls are excellent; they are not over-refined into ladies, and they are equally not gross, ignorant country bumpkins; there is no false sentimentality as in Feyen-Perrin's fisher-girls, nor is there the clumsiness of Lhermitte's women, but there is the true realistic appearance of the Breton peasant at her best, with the refinement that religious faith gives to the expression of the coarsest face — that M. Deschamps and others have failed to represent.

Another bit of realism in all its ugliness, but free from vulgarity, is M. Geoffroy's "*Les Rameaux*," a troup of orphans coming down the steps of the Madeleine with bunches of blessed box (which here takes the place of palms) in their hands. On the steps are poor women and children selling the "palm." It is exceedingly real and bright and fresh, but why need it be so ugly? I know there is a peculiar, heavy, fat-chinned appearance in orphans of all countries, and they generally look dull, but why not use a little poetic license and make one or two pretty?

Rembrandt painted a dead pig or sheep, and M. Cesbron has followed in his steps and given an enormous raw liver — large enough for the great mastodon. By the way, Rembrandt's "Lecture on Anatomy" is said to have been the model of M. Gervex's "*Avant l'operation*," with the slight difference that the one is a most powerful effect of light and shade and the other has no effect whatever.

There are a few very grotesque pictures. One I commend to lovers of sport: A huntsman of the stone age returns to his cave with a young buck to find a fine lion calmly sitting upon his wife's dead body. Tableau — great astonishment of the man, expressed by open mouth and outstretched hands, at the audacity of the lion, emulating the sportsman's taste. Another picture, a portrait, seems to have been too large for its frame, and although the feet of the man are full six inches from it at the bottom, the artist has cut off the top of the head to make it fit the frame. M. Besnard's eccentricities are amusing also. His "*Soir de la Vie*" represents two old persons dying, while behind, a young man seems to be tending the fire under a large vessel in which to cremate them. It might form the advertisement for a cremating company. I would suggest that the "*Femme nue qui se chauffe*" would do well to put on some clothes. All these are mere eccentricities to gain notoriety. M. Besnard is far too clever an artist not to be able to do otherwise if he were so minded. M. Moreau de Tours's work is always fine and broad, but what can be thought of "Mme. ———," who chooses to be painted on a garden bench suckling her baby (Mlle. ———) in sight of the multitude? True, she looks distressed, so much so that I took her for a well-dressed beggar-woman. But why, then, do it? "Mandolinata" errs in the same way. Why a woman in heavy velvet skirts should take off her upper raiment to play the mandolin is patent to no eyes but the artists'. These are of the class of pictures the British Matron should make a crusade against, not the refined nudities in which there is no harm but in the spectator's own eyes. One of the many clever still-life pictures is M. Otemar's "*Chez le chaudronnier*," — a mass of brass and copper vessels in every possible position. But good still-life abounds everywhere, as do first-rate portraits (M. Paul Dubois's small boy) and landscapes. M. Normann shows some Norwegian scenes under conditions of stormy skies and midnight suns — most brilliant work. M. Laurens' "*Agitateur de Languedoc*" is most vigorous and dramatic and withall more refined than some of his former works. Of all painters (since de Nittis's death) none render the southern sunlight as well as M. Montenard. His white

clad monks walking along the white road is vastly clever. M. de Mouvel's old people sitting on the beach is clever and refined; and in like manner, M. Lhermitte's "Haymakers" is excellent. Mr. Mosler's "Apaches" m kes one wish that more Americans would attack such subjects. True, tattooing is not beautiful, but the uncivilized red Indian is dying out, and it is a pity he should not be immortalized ere it is too late. There must be pictures que subjects without number in Indian life.

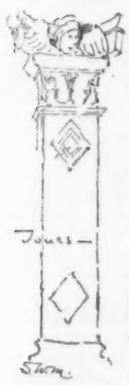
M. Comerre has surpassed himself in his portrait of Duflos as Don Carlos, arrayed in black and gold. The lady's portrait is fine as regards the dress and background, but the face is weak. Don Carlos is an instance of the wisdom of framing in other than gold frames. The picture would not be half so effective otherwise than it is. M. Béraud is, as usual, in the "Salle des Pas Perdues," realistic and powerful. The group of Northmen are well represented, MM. Melchers, Kuehl, and Skredsvig amongst others.

M. Bonnat's "Alesandre Dumas" is a work less black than usual with the painter, which is saying that it is a fine work, for, barring the tendency to blackness and the yellow background (both absent here) M. Bonnat's work is always of the best. Not so M. Carolus Duran, who seems to be going down hill. On the other hand, M. Cabanel is as fresh as ever. There is a certain dryness about his work, but his "Cleopatra" is well composed—a virtue which is rare with the *jeunesse* of the present day. I am a little tired of M. Gilbert's markets, and so I pass on to the sculpture which is very remarkable. In no other country do we find such life in this branch of art as in France. She seems to adapt it to modern views, or rather, she idealizes modern life. Peasants or fisher-folk are subjects fit for sculpture if properly treated, but if vulgarized as by the Italians it is prostituting art. "Dirty Boys" and children under umbrellas may be fit subjects for advertising soaps and parasols, but they are not art. On the other hand, what can be more refined than M. Guglielmo's "Fisherman mending his Net?"

Space will not permit me to describe all the works I have noted, but in the sculpture I should like to call attention to those of MM. Bourgeois, Perrault, Falguière, Worms-Godfary, Laoust, Beguine, Jacquot, St. Marceau and Cain.

The water-colors seem swallowed up by the fashionable pastels, but miniatures are increasing. Some are very charming (those amongst others of Mlle. Baily), and make one desire that such portraits may some day become fashionable again. Photographs never have and never will take their place. S. BEALE.

A DAY AT LISIEUX.



IT was a bright October morning when we first saw the old town of Lisieux. The white caps and blue blouses of the bronzed-faced peasants filled the streets with life and color, and as we entered the town and ascended the Rue Grande, which leads to the Grande Place where market was being held, we found ourselves in the midst of a scene of wonderful activity and bustle. At one end of the great square which is surrounded on all four sides by a double row of trees rises the cathedral, an imposing building approached by a broad and lofty flight of steps. Through the low stone arch at the left of the cathedral we caught a glimpse of a shady court-yard where stone steps with a balustrade led to the terrace above. Around the square are quaint, sombre buildings, which contrasted well with the rich colors of the glowing fruit and vegetables in the market.

In most of these small French towns there is a special market-day, usually Saturday, when the country people flock together, seemingly as much for the purpose of a friendly visit as for the more serious one of business. It is a day when care and trouble are banished from every face. Smiling countenances beamed from behind the stalls of tempting fruit and vegetables arranged with skilful hands, and the whole place was filled with the brisk gossip of men and women, and the lively bargaining of customers and vendors.

The dress of the women was full of low-toned color; only a few wore black-and-scarlet striped skirts. The bright-colored cotton handkerchiefs tied over their heads, white caps and blue aprons gave the color to their costume. The gaudy hues in which painters are fond of depicting Norman peasant women we saw only in the small fishing villages, where the vivid coloring seen in the dress of the people is conspicuous also in the gaily-painted roofs and striped gables of the houses. There the tints which might appear too crude and garish under other skies harmonize to a wonderful softness of tone under the peculiar mellowing effect of the atmosphere.

In La Haute Normandie the short loose jacket is commonly worn, but in La Basse Normandie the bright scarlet or orange and black neckerchief is worn across the shoulders in place of the jacket. These "*indiennes*," worn only on market and fête days, cost often from a dollar and a quarter to a dollar and a half, and are treasured for years. Everywhere through the Departments of the Seine and the Eure the men wear light blue blouses faded and patched, but at Lisieux, the shade becomes darker, and the patches almost invisible.

We left the sunny mirth of the market-place, and passed through the archway of the old building at the left of the cathedral, formerly the bishop's palace, now a sous-préfecture and containing a police tribunal and a prison. This palace was begun in 1637, by Bishop Cospéan, and probably served as a residence for St. Thomas à Becket, who spent the greater part of his exile at Lisieux. From the quiet court-yard on this side, in shadow, the merry crowd in the broad sunlight made a wonderful picture through the old archway. A steep flight of steps at the opposite end of the court leads to a broad terrace extending the whole length of the palace, from which we descended by flights of steps into a beautiful public garden.

Lisieux is situated at the bottom of a beautiful valley watered by the Torques and the Orbiquet. From these rivers there are many streams flowing through the town to work the mills, crossed by old and picturesque bridges. Artists find a rich field in the ancient many-gabled houses, with their marvellously carved fronts, in the exquisite contrasts of tawny green stone and red-tiled roofs, in gray bridges and glistening water, in the time-stained wood everywhere of a thousand brilliant hues.

There is nothing in Normandy to exceed in interest its domestic architecture. The finished details and good and massive proportions of these old houses show that they must have been very splendid before the peace of Normandy was disturbed by the troublous wars of the League and the Fronde. In the narrow Rue aux Fèvres, so narrow that it is difficult to sketch the tall buildings with over-hanging dormers on each side of the street, there are many curious houses, and one in particular is a study. It is known as the "house of the Rue aux Fèvres," and the carving is in an excellent state of preservation, although the building is more than four centuries old. Grotesque wooden figures about a quarter life-size support the brackets, and heavy oak beams elaborately moulded divide the stories. The carving between every window is bold and original. It would take too long to describe the wonderfully carved creatures to be found on almost every house in this street: pigs blowing whistles and bagpipes, dragons with huge serpents' tails, and men and women in quaint fifteenth-century costumes and head-dresses, ornament the corbels of these house fronts. We had heard that the interior of this especial house contained treasures also, and so entered the shop below where a lazy trade in boots and shoes was going on. In this room the beams of the ceiling were carved in all the designs, quaint and grotesque, that the Normans' inventive fancy could suggest. The shopkeeper was quite willing to have his dwelling admired, and readily consented to show us the rooms above, though he did insist that there was not much to be seen. We followed our guide up a narrow dark staircase, and into a room which he entered unceremoniously, scarcely giving the occupant of the bed who had evidently not yet arisen, time to draw a screen before his bed. This undue invasion of another's apartment to grant a favor to inquiring strangers might naturally have been resented, but no further heed was paid to our entrance; it was only one more to add to the list of our many amusing experiences. The walls of the chamber were ornamented with many curious designs, and the doors inlaid with panels, carved with odd, exquisite devices. As we were about to leave the room our companion intimated that he had still something more to show us. After an unsuccessful search for some article, he called in a shrill voice from the stairs, "Marie, Marie, *la clef!*" The round-faced, smiling wife, baby in arms, soon appeared with the missing key, and an immense wooden box was opened, and four wooden plaques or medallions, upon which were carved representations of mythological characters, triumphantly held up.

"What are they worth?" we asked.

"One hundred francs for the four," he replied, adding, "It is not dear, they are very old and well carved. They were taken from the walls of this room, and I have put them in this box for safe keeping."

Certainly the price was not high for such skilful workmanship, but we allowed him to lay the precious bits of antiquity carefully in their place for another purchaser. When we said good-bye to our friend, and offered him the customary franc for his trouble, he refused the silver with so much spirit, that we felt quite ashamed not to have perceived that he was above the ordinary fee-taker.

In the evening we wandered again into the same street, pausing often to watch the industrious people who did not cease their work with nightfall. Through the open doorway of a queer little shop we could see a shoemaker hard at work on his wooden *sabots*. His swarthy, ruddy face was lighted by a flickering candle and full of energy as he bent over his work, and with quick, energetic strokes of his sharp knife rapidly transferred the rude block into the shoe which satisfies the primitive wants of the peasant. He noticed the interest with which we watched him, and ventured to ask us if we did not wear those shoes in our country.

"They are far too heavy for us," I replied. "We should be clumsy indeed if we tried to walk in them."

"It is entirely a habit, madame," said he, "but what do you wear for the *boue?*" he continued.

"For the mud? oh, that is quite easily explained. We have overshoes made of rubber, which we wear over our leather shoes, to protect them from the wet."

By way of reply, however, he indulged in the inevitable shrug, murmuring almost under his breath, "*Mais la boue, la boue,*" not seeming to understand how anything but a wooden shoe could surmount this obstacle.

Piles of shining black *sabots*, newly painted, covered the tables, and there were plenty more waiting for the finishing touch of the brush. It is not strange that these heavy, clattering *sabots* make the women so ungraceful, even when the clumsy covering is exchanged

for a lighter shoe. We could not help contrasting their shuffling, awkward gait, as they clatter through the stone-paved streets, with that perfect freedom of motion which characterizes the bare-footed fisher-girl.

From the shadowy Rue aux Fèvres we found our way to the cathedral, or the parish church of St. Pierre, as it is now called. How wierd the old church looked in the dim light of the candles burning in the small side chapels and a few hanging-lamps, which shed at intervals a soft glow over the sombre aisles. Throughout the country the stranger upon entering these stately cathedrals cannot fail to be impressed with the simple piety of the worshippers. They come in the early morning, market-basket in hand, before the day's work begins; at mid-day, when the sun is streaming through the glorious stained windows, a moment is spared from busy toil in shop or market; and at night their feet are never too weary to cross the holy threshold of God's house. It must indeed be a sceptical mind that can doubt the sincerity of this people's religion, after seeing their faithful and earnest devotion.

Of the first church only a portion now remains. Here the son of Henry I was married to the daughter of Fulk, Count of Anjou, and also Henry II to Eleanor of Guyenne, the divorced wife of Louis VII. The rest of the church was burned in 1226. The deed of the endowment of this building records the repentance and self-condemnation of Pierre Cauchon, Bishop of Beauvais, who helped in the condemnation of Jeanne d'Arc. He founded the Lady Chapel in the fifteenth century, as a fruit of his repentance. There are a few beautifully-carved bits about the church, but the interior has a cold look, from the entire absence of stained-glass, which was probably destroyed by the Calvinists when they took the town and plundered the cathedral.

Lisieux is one of the fine old Norman towns that remain unmodernized, and we may dare to hope that the whirring wheels and tall chimneys of neighboring manufactories will spare the old houses which are such precious remnants from a Feudal age.

No one who visits Normandy can fail to note the vast difference which exists between English clergymen and French ecclesiastics, in the value they set upon ecclesiastical edifices solely as buildings. At Caen the beautiful and graceful church of St. Etienne le Vieux is filled with firewood, old vehicles and rubbish of all kinds, and the old Norman church of St. Nicholas, with its picturesque tower and round-headed doorways overgrown with ivy, is turned into a hay-loft for cavalry, and surrounded by an ugly stone wall. It seems strange that the authorities of Caen do not restore these interesting buildings to their original destination, instead of building modern churches. The inhabitants of Chester contrive to keep the characteristics of their ancient city intact, and still move on with the necessities of modern times; but the people of Rouen and other Norman cities seem to take pride in putting something most modern in character in place and by the side of that which is most ancient.

Although charming at any season of the year, Normandy should be visited in the springtime, when the hedges are rich with masses of primroses and cowslips, and miles upon miles of white-blossomed orchards cover the green sides of valleys. A. J. N.

COMMUNICATIONS.

THE DESIGN FOR THE DETROIT POST-OFFICE.

Washington, D. C., May 11, 1887.

To the Editors of the American Architect:—

Dear Sirs, — Please publish in the next issue of the *Architect* that the design of the Detroit Post-office has not yet been "passed" by me. The Galveston design has been approved, and the working-drawings are now in course of preparation. All other designs which have been forwarded to you, in response to your request of November 4, 1885, have received my approval, and the buildings are now in course of construction. The perspective sent you was made at a cost of $61.15, and a full knowledge of its conception on your part would, no doubt, have prevented your premature criticism of the 7th instant. As a "public functionary" I have neither time nor disposition to enter into a newspaper discussion as to its merits or demerits.

Respectfully yours,
M. E. Bell,
Supervising Architect.

[We regret that this letter reached us May 13 — too late for publication in our issue for last week. It seems to us that Mr. Bell advances what the lawyers call a plea in avoidance. The fact that he has not "passed" the design makes him neglect the fact that the Detroit reporter quotes him as saying of it, "I am pleased of [*sic*] the results, so far." Moreover, it is only reasonable to assume that an architect will not offer for publication a design of which he does not approve, and it is just this matter of personal approval by an official that makes us feel that the present condition of the Supervising Architect's office is so unpromising. As to our criticism being "premature," we will ask, after premising that we did not intend to write a criticism, but a rebuke, whether criticism of a design is most timely when offered before or after its adoption? There seems to be something like disingenuousness in the attempt to make it appear that this design was prepared at an insignificant cost. Probably the cost of the *perspective drawing* was only $61.15, but even in the Supervising Architect's office such drawings are not made at the first flight. The information we have gathered since the publication of the design leads us to believe that it cost the Government about $1,100 to have prepared, under the direct supervision of the chief of a very important bureau, a design as to the advisability of "passing" which the chief of that bureau now seems to entertain some doubts. — Eds. American Architect.]

Washington, D. C., May 11, 1887.

To the Editors of the American Architect:—

Dear Sirs, — As I am the designer referred to in your denunciations of the Detroit Government building, I beg to be allowed a little space in the *American Architect* to make a few remarks "for the defense."

I assure you, my dear sirs, after reading and re-reading the article in question, I was amazed. From the prelude of it I expected some criticism which I failed to find; what I did find was: you simply "call it names," which, as your own personal dictum, would amount to nothing to me, but the weight which the *American Architect* gives it demands a reply.

You say "it is not supposable that such an abomination *can be built.*" You better read up "*Building Superintendence,*" and if that don't give you the points necessary, I can refer you to a number of books that will. Everything about it has feet to stand on; nowhere has there been a deviation from scientific principles of construction laid down "in the books."

In your last paragraph, you wonder how it comes that the Supervising Architect can pass this design and not reject the one for Galveston. Well, I can tell you, it is because he is a liberally-educated, liberal-minded man — not at all "hide bound." You forget there is a possibility of the existence of things "beautiful, good and true" outside of the range of your horizon. I assure you this design is the result of the most careful and painstaking study, by all concerned, and while talent may be lacking in this work (for myself I never laid claim to any, only that for earnest, hard work, as is well known), yet there is a *raison d' être* for everything about it, while it has been the aim to go away from all the beaten tracks — no known or established law in form or construction has been violated. It is one organic whole, practical and convenient for its work, and probably the best-lighted large Government building in this country. There are a number of novel features in form and manipulation, overcoming serious difficulties in former methods, that have probably escaped your notice, as was the case with the most noted architect of Detroit (no friend to this office), who said, in an interview, after having seen a newspaper cut of it, "I consider it an *incongruous conglomeration of rubbish.*" In a second interview, after having seen the large drawing, which was sent to Detroit for exhibition, he said the newspaper cut didn't give him a correct idea of it, and "if the building is completed according to the drawing now on exhibition, it will be one of the handsomest public buildings in the country."

Aside from him, I have heard criticisms of six prominent American architects (and of small fry, I don't know how many); three of the six belong to the *ten foremost professional names of America,* and while each one objected to some small feature or other, the opinion of *each of the six was exactly the opposite of yours.* Wherever a fault is pointed out to me, I do my best to cure it; I did so here. There was a standing invitation for criticism, and we got lots of it all along the road, and I was pleased to note one thing throughout: The travelled and cultivated layman was invariably delighted — sometimes went into extacies over it. The greater the reputation of the architect, the more he found in it to admire; the smaller or the less favorably known, the less he liked it. This should establish the fact that there are two sides to this question, and the poet is right when he says:

"Wenn deine Kunst dem Geck gefällt, dies ist mir schon ein böses Zeichen."

In conclusion, I must say I was surprised at the *temper* of your article. From your post I expect friendly *advice* and *instructive criticism;* blessing and Godspeed for every honest, earnest effort forward, instead of such a "cussing out" as you have just favored us with. Don't forget that the history of architecture is but a history of a succession of experiments — successful but once (!) in the course of time (the Parthenon) — and that what is good will *live,* in spite of you or your protests, no matter how emphatic.

If our generation shall succeed in formulating a passably respectable style of our own we should be satisfied. It is asking altogether too much to expect perfection in the earliest efforts.

Very respectfully yours, John Moser.

[We will first relieve Mr. Moser's doubts as to our knowledge of construction by explaining that when we expressed a disbelief that the Detroit design could be executed we referred to moral and artistic, not to physical and constructional possibilities. Next, as to the matter of "personal *dictum*": the opinion we expressed on this matter was, of course, the opinion of individuals, but at the same time was the opinion of those same individuals whose expression of opinion in the past has earned for the *American Architect* that very "weight" which our correspondent feels he cannot disregard. We appreciate fully the power of the weapon we have fashioned, and we hope we may never misuse it. Upon the merits of any given design there will always be differences of opinion. We suppose that even Churriguera, who sought to evolve a new type of Spanish architecture, as Mr. Moser does to found an American school, had his admirers and supporters; but in what repute are his designs held nowadays? For Mr. Moser, as a tireless worker, a thorough lover of and believer in architecture as a fine art, and as a designer of great ingenuity — where the subject is not beyond his grasp — we have a very sincere respect; but, like many enthusiasts, he miscalculates his strength. We can easily believe that he had well-considered reasons for every part of his design, but we fear that a statement of them would only increase our respect for his ingenuity. How great this ingenuity is our readers may remember; or, if not, they may discover by turning to his remarkable design for a building for the American Institute

of Architects, published in our issue for January 19, 1884. Here will be found, amongst other individualities, one pavilion into whose adornment is wrought a Pullman car, a horse-car, a grand piano, a jig-saw, full sets of mechanic tools, etc., distributed with perhaps as much ingenuity as baldness: an effort which is not unlikely to excite the risibilities of the observer until he turns to the elaborate description of the design and discovers with what earnestness, sincerity and lavish expenditure of time and thought the whole design has been elaborated, a discovery which commands for the intention and effort a respect which cannot be accorded to the result. We are willing to admit that we should probably admire the processes of ratiocination applied to the evolution of the Detroit design, but we do not believe that they would cause us to change our opinion of the result, namely, that it is a design which the architects of this country cannot allow to be carried into execution without protest. — EDS. AMERICAN ARCHITECT.]

CHICAGO, May 16, 1887.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — If you will permit a further expression of opinion on the subject of the design for the Detroit Post-office, I beg that you will allow me to second most heartily your criticisms upon that most wretched piece of work. In your last issue I notice a letter from a Chicago architect who actually "ventures the assertion that if you ask the opinion of the profession throughout the country you will find a fair majority that will call it good"! For the sake of whatever reputation Chicago architects may have, let me, in the name of all that is good, cry out against such words. We have enough atrocious work in this country now, without permitting favorable criticism upon this latest abomination to pass unanswered by every one who cares the least for the good of his profession. It is a shame — a shame upon us, as a nation — that the work of the Government should be put into such hands.

I beg that you will not drop this subject without publishing all the opinions that members of the profession are willing to give against this latest example of our national ignorance — for such it cannot fail to appear to those who do not know how carelessly our public officers are chosen. In France and Italy the Government work is the best that the people can produce. In the United States it is, more often than not, the worst; and it is high time that some strong movement should be started to purge the present system of doing the public work from its faults. It is for the *American Architect* to begin that movement.

Yours very truly, J. N. TILTON.

OUR GELATINE PRINTS.

CLEVELAND, O., May 9, 1887.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — Having just read with satisfaction your remarks upon the subject of architectural criticism, in your last issue, I cannot refrain from expressing a few thoughts that have been in my mind for some time. Before proceeding with these, let me say that I think as you do, that it is a misfortune that you do not feel at liberty to criticise freely any design that you publish.

Your remarks upon the "design" for the United States Post-office and Court-house at Detroit are sufficient to convince me that such a course pursued with reference to many of the drawings you publish would not only be decidedly useful, but would tend to the establishing of a much higher regard for your architectural knowledge and taste in the minds of many of your readers.

As a subscriber to the "Imperial" edition, I cannot help feeling, to a certain extent, imposed upon in the publishing of a large part of the illustrations, which form a special feature of that edition. I refer to the gelatine plates, for the selection of which I assume that you are alone responsible, and in no way dependent upon the courtesy of any contributor. What there can be, for instance, in the "House on Bellevue Avenue, Newport," accompanying the current number, and "issued only with the Imperial edition," to justify this distinction, I am at a loss to conjecture. It seems to me difficult to conceive of anything more devoid of interest or architectural value. I hardly see how you could even point a moral from such a design as this, if you were to avail yourself to the utmost of the liberty of criticism.

With reference to some of the plates, which have at first sight excited my indignation, I have later become reconciled, and am prepared to believe that their publication in all the unflattering truthfulness of a photographic plate is justified by their value as curiosities: the view of a Methodist Church at Baltimore, recently published, is one such. Had that design been a reproduction of a drawing, I venture that a majority of your subscribers would have had a suspicion, at least, that, as you suggest with reference to the designer of the Detroit Post-office, some one had been "playing a huge practical joke." In fact, after looking at the heliotype, it is difficult to avoid that conclusion.

I do not wish to be hypercritical, and I think it is only reasonable to desire, and to expect, too, that of the extra gelatine plates, published for the extra price, every one should possess architectural merit, or interest of some sort, sufficient to justify its preservation; and that such has been far from the case in the past, I am by no means alone in the opinion.

Trusting that you will accept the foregoing as emanating from a desire to see the value and usefulness of your journal increased, I remain, Very truly yours, F. S. BARNUM.

[FIRST, as a reply to the grievance which Mr. Barnum feels he has against us for the choice we make of subjects for the gelatine prints, let us say that when we introduced these plates we announced that we could not promise that each subject should be the best of those which up to that time had remained unpublished, but that all we could promise was that in the aggregate the gelatine prints published should be worth the increased subscription price. Next, it is never to be lost sight of that a very important function of this journal is the presentation of an illustrated record of what American architects are actually doing. Even if we ourselves, and ninety-nine per cent of our readers, heartily disapproved of the design, still we should consider that a large and expensive ecclesiastical building, erected in one of the largest and wealthiest cities of the Union, after the designs of architects of the highest standing, was a very proper subject for illustration. As for the house at Newport, we might point out that any building with closed blinds and boarded openings is subjected to an unfair ordeal under the eye of the camera; we might say that the house when photographed was believed to be the dwelling of a man known to all the world, and, as such, of interest to the ὁι πολλοι; we might say that it was shown as an example of brick and terra-cotta architecture, but the truth is that it was simply a *pis aller* — one of those subjects secured during a day's work with the camera, without any real intention of making use of it, but in this case used because for one reason or another the other subjects under preparation could not be used. — EDS. AMERICAN ARCHITECT.]

A QUESTION OF COMMISSION.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — I wish the following question decided, or, at least, your opinion upon it: I was engaged, some time ago, to furnish plans and specifications for a wharf and warehouse, and superintend the same. I agreed to give my full services for three per cent on total cost. Bids not being satisfactory, owner decided to build on his own account under my superintendence. Warehouse was built upon a brick foundation, but the concrete bed specified was not put in (with my consent). As soon as the warehouse was completed, I received $75 on account. The warehouse was filled with lime, cement, etc., and settled so that repairs were made necessary. Am I entitled to pay for my superintendence, or not? The owner, being his own clerk-of-the-works, have I a right to know the exact cost of the building? I purposely give you the plain facts, in order not to prejudice your opinion in my favor, and, therefore, will not state why I consented to the concrete bed being left out, or make any other excuses.

Please answer the above as soon as you can, as I intend to be guided by your decision or opinion in this case.

Yours very truly, C. E.

[C. E. does not give us facts enough to judge very clearly of his case, but if he, an expert, undertook to supervise the construction of a building, either from his own designs or some one else's, and, knowing that the building would be used for the storage of heavy goods, was so negligent as to omit ascertaining the character of the ground on which it was to stand, or so careless as to allow an insufficient foundation to be substituted for the proper one specified, so that serious settlement took place, he is not, in our opinion entitled to receive anything for his services as superintendent. In regard to the second question, it is well settled that if two parties make an agreement by which one is to be paid a certain percentage on the expenditures made by the other, the latter must render a true account of such expenditures, in order that the percentage may be calculated. In an English case, where an architect had to sue an owner for his fees, the judge ordered the owner's books to be brought into court, so that the proper percentage might be reckoned, and the same thing would probably be done here. — EDS. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS

SUFFOCATION IN WELLS. — M. Gréhaut recently read a paper at a meeting of the Biological Society of Paris on "The Prevention of Accidents from Suffocation while descending Wells." The cause of suffocation under such circumstances is the presence of carbonic acid gas; and M. Gréhaut suggested the following plan for discharging the gas from the well. A pipe some 10 feet or 12 feet deeper than the well is let down into it and secured by the sides of the well. A grate on which a fire can be built is then to be placed around this pipe at the level of the ground, and a second pipe, larger than the first, is then to be placed upon the grate having the first pipe inside. On the grate between the pipes a fire is to be built, which, heating the inner pipe, will create a draught and draw off the noxious gas. — *Engineering.*

A BIG STRIKE AVERTED. — A refreshing little story, illustrating some curious relations between employers and employés, comes from Whitney's Car-Wheel Works, at Sixteenth and Callowhill Streets. Some few weeks ago the 200 employés of the foundry, which covers the entire block from Sixteenth to Seventeenth Streets and from Callowhill Street to Pennsylvania Avenue, were on the verge of a general revolt, not because of anything the firm had done, but on account of the action of their subordinates. William Thomas, assistant foreman to John Thomas, the chief, had, in the absence of his brother, discharged two tried and trusted employés, Thomas Moffat and William H. Horstman, and had filled their places with three other Irishmen. That caused the trouble. Strange as it may seem, that was in direct violation of one of the rules of the works. Old Asa Whitney, the head of the firm, before he died, fourteen years ago, had directed in his will that no faithful employé of his foundry should ever be discharged by his successors, and that no reduction in wages should ever be made. Moffat, who is a sturdy, self-reliant body, knew this tradition of the works, and immediately after his discharge he went directly to headquarters. He laid his case before John L. and James S. Whitney, the sons of the founder, and proved that Assistant-foreman Thomas had discharged him because he refused to do an impossible thing. The two brothers Whitney summoned the two brothers Thomas before them and investigated the case. The result was that last Saturday evening the latter were both discharged. Peace and good will were restored in the

foundry, and the employés talk proudly of the loyalty displayed by the firm in discharging the foremen and reinstating Moffat and Horstman; following the spirit of Asa Whitney's will.—*Philadelphia Press.*

Reproduction of an old Tyne Bridge.—Following the popular precedents of "Old London" and "Old Edinburgh," a notable feature of the forthcoming Royal Mining, Engineering, and Industrial Exhibition on the Town Moor, Newcastle, will be a reproduction of the old bridge across the Tyne. Having stood for more than 500 years, that bridge was destroyed by a flood in 1771. It was largely constructed from out of the ruins of an earlier structure which had replaced the the bridge of Hadrian (A. D. 120). Having a tower and portcullis at each end, it was, like old London Bridge, crowded with houses. It had also a central stronghold, together with a chapel dedicated to the Virgin. Here, according to Lanercost's *Chronicle*, was exposed the right-side quarter of William Wallace. In later times the remains of an Earl of Northumberland and of other worthies were similarly displayed.—*London Paper.*

A Blacksmith's Epitaph.—Carisbrooke Church, said to be founded 1064, has been partially restored, says the *British Architect;* it is beautifully situated, surrounded by a fine old churchyard, adjoining the "Priory Farm House," the site of the priory attached to the old church. There are a few monuments and a pulpit, dated 1658. The tower contains eight bells. There is some fine bold carving on the pinnacles, and the view from the tower is magnificent. There are some curious stones in the church-yard: a slab over the grave of a farrier has the following lines:

"My sledge and hammer lie reclined.
My bellows, too, have lost their wind;
My fire's extinct, my forge decay'd,
My vice all in the dust is laid;
My coal is spent, my iron gone,
My last nail 's driven, my work is done."

The Strikes in April.—*Bradstreet's* says, that during the month of April the number of strikes by or lockouts of industrial workers throughout the United States was 123, a total far in excess of the number in January last, 92. The largest number of strikers in April were in the building trades, about 14,600; next the stove-moulders, over 5,400; then the iron-workers, about 2,300—which classes account for two-thirds of the total striking that month. April strikers by trades, as reported to *Bradstreet's*, are as follows:

Leading lines reported.	No. Strikes.	Strikers.
Transportation, marine and allied trades	2	160
Steam railways	2	480
Coal mines	7	1,745
Boots and shoes	2	730
Tobacco	3	419
Cottons	7	907
Woollens	5	985
Clothing	2	650
Silk	1	25
Iron, etc.	12	2,335
Steel, etc.	3	300
Machinery	2	355
Coopers	1	100
Miscellaneous	8	1,105
Stove-makers	24	5,474
Building trades	27	14,642
Salt-makers	1	350
Printing	1	16
Silver-workers	2	270
Copper	3	65
Glass-workers	3	581
Lumber	2	40
Carriage-makers	2	140
Pottery	1	30

The total number of employés striking or locked out during April, about 32,000, is nearly twice as many as were reported striking in March, nearly one-third more than in February, and but four-ninths of the total for January last. The totals of strikes and of strikers by months for four months of this year and last are as follows:

1887.	Jan.	Feb.	Mar.	Apl.	Totals.
Total number strikes	92	75	87	123	376
" strikers	73,300	26,000	16,965	31,910	148,185
1886.					
Total number strikes	19	5	16	9	49
" strikers	47,200	10,700	50,200	22,606	130,700

The total of strikers in April last year was but two-thirds as many as in April, 1887; was not equal to one-half of the total for March; was more than twice as many as in February, and less than one-half of the total for January, 1886. The total number of labor-strikes and lockouts this year to April 30, is 376, against 49 reported in a like portion of last year. The total number of men involved is 148,000, against 130,000, a gain of 14 per cent.

TRADE SURVEYS

In between twenty and thirty large cities throughout the country associations of employers have been formed within the past twelve months for mutual protective purposes, or, rather, for defensive and offensive operations. The tendency to organization has been caused and stimulated and nurtured by labor agitations, and it may be said to be in its infancy. Employers to-day, unless they have carefully studied the labor problem in all its bearings, or have forecast the advantages to be derived from harmonious action on their part, do not understand the extent of the field into which they are just entering. The advantages will be many-sided; first, that of protection against the unjust or insolent, or arbitrary demands of labor; second, the moral effect upon labor which such organization will have; third, the restriction of competition, and the establishment of *entente cordial* between the employing interests themselves—a spirit which is very much needed; fourth, the creation, where it does not now exist, and the firmer establishment, where it does, of confidence between capital seeking industrial investment and those who will superintend its operations. These specifications would be continued but there are enough shown in the few to roughly define the limits of the field to be filled by the new organization movement among employers. Competition is said to be the life of trade, but it is oftener its death. The organization now going on among manufacturers will very largely define and establish the legitimate limits of this spirit of competition. Heretofore, in our industrial progress, it has been running wild. Too much competition, like too much liberty, is productive of very disastrous results. In Great Britain it has established a condition of chronic poverty among millions. On the Continent it has made progress, outside of certain narrow limits, an impossibility. In the United States it has made disasters a sort of commercial necessity.

This question will bear a great deal of agreeable theorizing, and the deduction of a great many seemingly-plausible conclusions. A general combination among employers has never heretofore been thought of. In fact, so great has been the opposition to it, or, more strictly speaking, so little has attention been given to it that nothing, comparatively speaking, has been done by preconcerted effort. Employers have been thrown and dragged together by force of circumstances, and have been compelled to talk over trade matters, and act in harmony. The experiments that have been tried have so far produced good results. One other feature which recent labor agitations have developed, is that which is called the "profit-sharing movement." The great body of employers look with suspicion and distrust upon it. It embodies a surrender of prerogatives which they have heretofore supposed to belong to proprietorship. After all, the notion is more of a sentiment than a reality. The profit-sharing movement is destined to meet with a wide acceptance. Within the past two months some twelve or fifteen experiments have been inaugurated, and it is probable that during the year many others will be made. The out-and-out trades-unionist is opposed to it. It is favored by that class of laborers who are not in a position to successfully organize or to act in concert. The idea is favored by employers of a humanitarian turn, who mix sentiment with business, and who hope for honor as well as profit through the experiment. There are certain strong features in the profit-sharing system which commend themselves to employer and employé, and it is likely to be tried on a large scale, and frequently as an alternative against strikes and their consequences. The general tendency is to a juster division of the profits of labor. Capital is gradually receiving less, excepting where it can be controlled in a speculative way. Labor is gradually receiving more, as the industrial statistics everywhere show. Yet in the long run, labor will be the hewer of wood; capital will be shrewd enough to seize upon advantages and opportunities which labor cannot foresee, or, if it could, could not take advantage of. One of these opportunities is the buying of the land of the country, to be parcelled out and sold at all sorts of extravagant prices. This is about the meaning of the real-estate boom we read of. The generally healthy condition of industry and trade is protected by the assurance of a steady increase in the volume of currency. The heavy purchases of Government bonds during the past year are helping to crowd industrial capital into new directions. The silver certificates, the foreign investments, and the rapid increase of negotiable paper, are all helping to swell the volume of business, to strengthen the confidence of the wise and the ignorant, and to multiply and expand opportunities for money, energy, and labor. The industries themselves are gaining in strength every week. The latest iron-trade summary shows that the production of crude iron has reached over 138,000 tons per week, or over 6,500,000 tons per year, which is 1,000,000 tons in excess of the production of 1886. The steel-rail production this year will, in all probability, be forty per cent in excess of last. The increase in bessemer steel of all kinds is at the rate of not less than forty per cent, and the increase in other kinds of material is nearly in the same proportion. Despite this enormous increase stocks of iron and steel are an unknown quantity. Importations are assuming what, to the American manufacturer of iron and steel, are alarming proportions, viz., at the rate of 3,000,000 tons per year. The actual importations of iron and steel, including iron ore and tin plate for the last nine months, are in excess of 1,800,000 tons. The foreign contracts now being executed amount to at least 500,000 tons of materials of all kinds, which will be poured into this country during the summer months. Despite our enormous production and enormous importations the markets are practically bare, and buyers are seeking sellers, and sellers are holding to strong prices and talking of further advances before the season is over. The anthracite strike, which was trumpeted abroad a week ago has, to all appearances, suddenly collapsed, and the anthracite coal producers have put the cap on the climax by ordering a suspension of production, for a week, beginning Monday, in order, as they say, to effect a desirable depletion of the one million tons of coal at tide-water points in the interests of better prices. They are hitting two birds with one stone, viz., higher wages, and the miners' strike. The Connelsville coke-workers are deeply embittered at the results of their arbitration, and are hurling back the taunts thrown at them by their co-workers and their employers. The developments in the lumber trade during the past six days, are in favor of strong, and possibly, stronger prices for yellow and white pine, spruce and hemlock, poplar and oak. The car-builders are heavy buyers of hard wood; the house and shop builders, of poplar and spruce, while white and yellow pine and hemlock seem to go into consumption everywhere, about as fast as rail and shipping facilities can deliver it. Prices have continued very firm, and while it is possible that prices may be firmer, by the development of an extraordinary mid-summer demand, the probabilities are that they will remain about where they are. The saw-mill capacity of the country is driven to its utmost capacity. The distribution of the multifarious products of New England shops and factories, has been in no wise checked by the slight depression of the past two weeks. Some of the more prudent manufacturers of woolens and woolen goods, are restricting output, but the industry at large, is producing more yards of cloth this year, than last. The boot and shoe-makers have had a very prosperous season, in spite of strikes, and the "free shop" movement is promising some little comfort to employers. The manufacturers of heavy machinery, boilers and engines, as well as of electrical appliances, are loaded up with orders, from one to three months ahead. The industries of the Middle States are exceptionally prosperous, and trade journals exhibit a slight improvement in the general demand. The great factor of railroad construction is still wielding its powerful influence in favor of expansion and strong prices. Numerous inquiries are coming from the South for more machinery and material. One Pittsburgh mechanic, only last week, closed contracts with an Alabama syndicate for two more blast furnaces, to cost $450,000. The string of new enterprises in the South and West, strongly backed by capital, are becoming rather monotonous, but they show that there is an abundance of money, enterprise and faith among the leaders of industrial activity.